The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 75, No. 19 CHICAGO, ILLINOIS NOVEMBER 6, 1920

ABDOMINAL PAIN IN DISEASES OF THE KIDNEY AND URETER*

ARTHUR B. CECIL, M.D.

LOS ANGELES

This study is based on a critical review of 300 cases in which a complete urologic investigation has been carried out on the upper urinary tract. It has been undertaken for the purpose of determining the frequency of occurrence and distribution of abdominal pain in association with diseases of the kidney and ureter.

The classical picture of pain beginning in the region of the superior lumbar triangle, radiating to the lower abdomen and to the genitalia or thigh, is undoubtedly the most typical picture of renal pain. It is not appreciated, however, how often this typical picture is absent; much less is it appreciated that pain arising from diseases of the kidney and ureter is often purely abdominal in type, with no pain in the back whatsoever.

When abdominal pain is the most evident symptom of renal or ureteral disease, it may be extremely misleading, for, as will be shown, the localization of the pain is oftentimes in the neighborhood of McBurney's point, or in the upper abdomen beneath the costal border. On the one hand, it may be confused with the pain of appendicitis, and on the other, with gallbladder disease or gastric disturbances.

It was soon recognized, in reviewing these cases, that practical data of scientific value could not be derived from them unless the cases were grouped and studied systematically, for in no other way was it found possible to draw general deductions from material so comprehensive in its scope.

To complete the clinical picture of the various groups, it has been necessary to surround them by certain data in association with the distribution of pain. The cases have been classified under twelve main groups, namely, stone in the kidney or ureter; renal tuberculosis; pyelonephritis; hydronephrosis; tumor of the kidney; polycystic kidney; nephroptosis; pyonephritis; chronic nephritis; congenital malformations of the kidney; cystitis, and a miscellaneous group comprising cases of essential hematuria, cases which were studied for differential diagnosis, various rare conditions, and those in which the findings were negative.

GROUP 1. STONE IN THE KIDNEY OR URETER

This group comprises sixty-seven cases. The youngest patient was 10 years of age, and the time of life in which stone most frequently occurred was between the ages of 30 and 44. During this period thirty-six cases were found. There were three patients between 65 and 69 years of age.

The duration of symptoms varied all the way from seven cases under one month's duration to one case with symptoms dating back over forty years.

Of the sixty-seven cases, urine was found to be entirely negative in seven cases. Blood was found in the urine in fifty-six cases, pus was found in the urine in fifty-four cases, albumin was present in thirty-two cases, and the urine was found to be infected in fourteen cases.

TABLE 1.—AGE OF PATIENTS IN GROUP 1

Age	No. of Cases
From 10 to 14	1
From 15 to 19	0
From 20 to 24	4
From 25 to 29	5
From 30 to 34	9
From 35 to 39	17
From 40 to 44	10
From 45 to 49	7
From 50 to 54	4
From 55 to 59	5
From 60 to 64	2
From 65 to 69	3

TABLE 2.—DURATION OF SYMPTOMS IN GROUP 1

Duration	No. of Cases
Under 1 month	7
Between 1 month and 1 year	16
Between 1 year and 2 years	10
3 years	4
4 years	3
5 years	2
6 years	4
7 years	2
8 years	2
9 years	0
10 years	3
Between 11 and 15 years	7
Between 16 and 20 years	2
Between 21 and 25 years	3
Between 26 and 30 years	0
Between 31 and 35 years	1
Between 36 and 40 years	0
Between 40 and 44 years	1

Thirty of the cases showed bladder disturbances which varied all the way from minor grades of frequency or discomfort to very marked frequency, pain and tenesmus. It will be noted that although bladder disturbances were present in thirty cases, the urine was infected in only fourteen, so that the bladder disturbances were not necessarily dependent on infection of the urine.

When the stone was present in the lower end of the ureter, rectal tenesmus was often complained of, and this occurred irrespective of whether the stone was in the lower portion of the right or the left ureter.

It is primarily with pain with which this paper is concerned. In the cases of stone in the kidney or

* From the Hospital of the Good Samaritan.

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

ureter, pain was present in every case, and in the large majority of cases the patients presented themselves for treatment on account of pain. In a few instances, hematuria was the principal complaint.

Twenty-one cases presented typical renal pain, that is to say, pain in the region of the superior lumbar triangle, which tended to radiate along the course of the ureter.

Nineteen cases presented pain in the abdomen alone. It is most striking that 28 per cent. of cases of stone in the kidney and ureter presented abdominal pain without pain in the back. The abdominal pain in these cases was thus distributed: In seven instances pain was limited to the left lower abdomen; in six, to the right lower abdomen; in one, to the left upper abdomen; in four, to the right upper abdomen, and in one case, to the epigastric region.

When the pain was present over the lower abdomen, it occurred in the neighborhood of McBurney's point when on the right side, and in the corresponding position when on the left side. As a rule, it was found a little farther lateral than McBurney's point, but at times was found just at McBurney's point, and in some instances above it.

The distribution of pain when in the upper abdomen was usually just beneath the border of the ribs in about the mammary line or a little mesial to it.

In the case in which pain was limited to the epigastric region it was described as a "deep in" pain, and would hardly lead one to think of a renal condition as its origin.

In twenty-six cases, pain in the back was associated with pain in the abdomen. The pain in the back was what is usually described as typical renal pain; but associated with it was pain in the abdomen which in some instances overshadowed the pain in the back. The abdominal pain in these cases was thus distributed: In five cases, pain was in the right upper abdomen; in four, in the left upper abdomen; in eleven, in the right lower abdomen; in two, in the left lower abdomen. In two cases there was diffuse abdominal pain, and in two cases there was a deep epigastric pain. In one instance there was a slight left lower abdominal pain, but the principal pain of which the patient complained was pain in the left testicle. It was only on routine roentgen-ray examination that a stone 1 cm. in diameter was demonstrated in the pelvis of the left kidney. In one other case, which at the time of urologic study showed well marked renal distribution of pain, there was a history of an operation on the epididymis, at which time pain was limited to the testicle.

The confusing nature of abdominal pain in cases of stone in the kidney and ureter is well brought out by the fact that in thirteen of the sixty-seven cases studied, various surgical procedures had been undertaken for the relief of pain in which the symptoms were in no way changed, and in which it was been demonstrated that the pain was of renal origin. In the thirteen cases in which operation was performed the procedures had consisted of nine appendectomies, one operation on the left epididymis, two abdominal explorations, one gallbladder drainage, and one removal of the right ovary. In one case in which the roentgen ray revealed a stone 2.5 cm. in diameter in the right kidney, the appendix and right ovary had been removed, and at a later date an abdominal exploration had been performed.

In only two of the thirteen patients that had been operated on was the urine negative. Among the other eleven, blood was present in eight cases; pus, in ten; albumin, in seven, and infection in four.

Five of the thirteen cases showed bladder disturbances, and in two of these the urine was infected. A brief history of the cases in which operation was performed is given in Table 3.

In addition to the thirteen cases in which operation had been performed, in which the operative procedure had been directed toward other conditions than stone in the kidney and ureter, there were eight cases in which

TABLE 3.—HISTORIES OF CASES IN GROUP 1 IN WHICH VARIOUS OPERATIONS HAD BEEN PERFORMED

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine				Operations
				Pus	Blood	Albumin	Infection	
1	Right lower abdomen	Present	21 yrs.	+	—	+	+	Appendectomy; removal of right ovary; later abdominal exploration
2	Right lower abdomen and right back	Present	18 mos.	—	—	—	—	Appendectomy
3	Right lower abdomen and right back	Present	6 yrs.	+	—	+	—	Appendectomy
4	Right lower abdomen and right back	Absent	2 yrs.	—	—	—	—	Appendectomy
5	Right lower abdomen and right back	Present	7 yrs.	—	+	—	—	Removal of right ovary
6	Right lower abdomen and right back	Absent	4 yrs.	—	—	—	—	Appendectomy
7	Right back	Absent	2 yrs.	+	+	+	—	Removal of cyst of epididymis
8	Right back	Present	3 yrs.	+	+	+	+	Appendectomy
9	Diffuse abdominal pain and pain in left back	Absent	2 yrs.	+	+	+	—	Appendectomy
10	Left lower abdomen	Absent	1 mo.	—	+	—	—	Exploratory laparotomy
11	Right upper abdomen	Absent	8 yrs.	+	+	—	—	Appendectomy
12	Right lower abdomen and right back	Absent	5 yrs.	+	+	+	+	Appendectomy
13	Right upper abdomen	Absent	6 yrs.	+	+	+	+	Gallbladder drainage

TABLE 4.—HISTORIES OF CASES IN WHICH ERRONEOUS DIAGNOSIS HAD BEEN MADE BUT OPERATIONS HAD NOT BEEN PERFORMED

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine				Diagnosis
				Pus	Blood	Albumin	Infection	
1	Right lower abdomen and right back	Present	10 mos.	+	+	—	—	Appendicitis
2	Left upper abdomen and left back	Absent	2 yrs.	—	+	+	—	Gallstones
3	Right lower abdomen and right back	Present	2 yrs.	—	—	—	—	Appendicitis
4	Right upper abdomen	Present	3 mos.	+	+	—	—	Gallstones
5	Epigastrium	Absent	10 yrs.	+	+	+	+	Ptomain poisoning
6	Right lower abdomen and right back	Present	5 mos.	+	+	—	—	Appendicitis
7	Right lower abdomen and right testicle	Absent	2 yrs.	—	—	—	—	Appendicitis
8	Right lower abdomen	Present	13 yrs.	+	+	+	+	Appendicitis

stone had not been diagnosed and in which a diagnosis of appendicitis had been made in five cases, gallstones in two cases, and ptomain poisoning in one case. In two of these cases the urine was normal at the time of urologic examination. The history of these eight cases is shown in Table 4.

A detailed study has shown that the position of the stone, whether in the kidney or in the ureter, has had little bearing on the distribution of the pain. Thus, it has been found that a stone in the lower portion of the ureter may give symptoms of pain in the renal region of the back or high up in the abdomen. It is likewise true that a stone in the kidney may give pain which is limited to the lower abdomen, and as has been shown in some instances, the pain may be virtually limited to the testicle. This fact has a bearing on the absolute necessity of covering the entire upper urinary tract in making roentgenologic examinations.

GROUP 2. RENAL TUBERCULOSIS

This group comprises forty cases. The youngest patient studied was between 10 and 14 years of age, and the oldest one between 70 and 74 years of age. The period of life in which most of the patients presented themselves for study was between 25 and 29 years of age. During this period of five years, eight of the forty cases occurred (Table 5).

TABLE 5.—AGE OF PATIENTS IN GROUP 2

Age	No. of Cases
From 10 to 14	1
From 15 to 19	0
From 20 to 24	4
From 25 to 29	8
From 30 to 34	7
From 35 to 39	3
From 40 to 44	6
From 45 to 49	3
From 50 to 54	3
From 55 to 59	2
From 60 to 64	0
From 65 to 69	0
From 70 to 74	1

The duration of symptoms varied very greatly. Two patients had had symptoms for thirty years (Table 6).

TABLE 6.—DURATION OF SYMPTOMS IN GROUP 2

Duration	No. of Cases
Under 1 year	2
1 year	6
2 years	5
3 years	2
4 years	7
5 years	4
6 years	2
7 years	1
8 years	1
9 years	0
10 years	1
From 11 to 15 years	4
From 16 to 20 years	3
From 21 to 25 years	0
From 26 to 30 years	2

There were fifteen cases of right renal involvement, thirteen cases of left renal involvement, and twelve cases of bilateral tuberculosis.

All the cases showed bladder disturbances, which varied from slight stinging on urination to total incontinence of urine. The majority of patients presented themselves for treatment on account of bladder disturbances or hematuria.

Every case showed pus in the urine, but in some instances only a very few pus cells were found after prolonged centrifugalization of two or more tubes of urine. Blood was found in the urine in thirty-eight cases, and albumin in thirty-four cases. Tubercle bacilli were found in every case directly by slide investigation, and only in a few instances was a guinea-pig injection of any help. In fact, in one case a guinea-pig injection was negative when tubercle bacilli had been demonstrated in the very specimen of urine with which the guinea-pig was injected, and from this patient a tuberculous kidney was removed.

TABLE 7.—AGE OF PATIENTS IN GROUP 3

Age	No. of Cases
From 15 to 19	1
From 20 to 24	6
From 25 to 29	9
From 30 to 34	8
From 35 to 39	9
From 40 to 44	15
From 45 to 49	6
From 50 to 54	7
From 55 to 59	5
From 60 to 64	5
From 65 to 69	6
From 70 to 74	1
From 75 to 79	1

On investigating the matter of abdominal pain or pain in the back, it was found that abdominal pain was present, without pain in the back, in seven cases. In these seven cases in which abdominal pain alone was present, the pain was thus distributed: right lower abodminal pain, one case; general diffuse abdominal pain, two cases; epigastric pain, three cases; diffuse lower abdominal pain, one case.

There were six cases in which pain in the back was associated with pain in the abdomen. The pain in the back in these cases was in what is known as the renal region. The distribution of abdominal pain was: right lower abdominal pain, one case; right upper abdominal pain, two cases; diffuse abdominal pain, two cases; epigastric pain, two cases.

Pain in the back alone occurred in eight cases. In eighteen cases no pain was complained of either in the back or in the abdomen, and the symptoms were entirely limited to the bladder. In studying the pain complained of in renal tuberculosis, it was found to be of entirely different type from that found in hydronephrosis or stone. It was usually not a demanding pain, but more of an aching in the region of the back; and when in the abdomen, it was often spoken of as a burning sensation. When in the epigastrium, it was usually a sickening pain, but in none of the cases studied was it of an acute severe type. This perhaps accounts for the fact that of the forty cases of renal tuberculosis studied, no abdominal operations had been carried out for relief of pain, although in one case suprapubic drainage of the bladder had been performed for relief of bladder tenesmus, and in another an internal urethrotomy was performed for supposed stricture of the urethra.

GROUP 3. PYELONEPHRITIS

This group comprises seventy-seven cases. As only cases in which complete urologic examinations have been made were selected, young children presenting pyelonephritis have not been included. Thirty-one per cent. of the patients that presented themselves for study were between 35 and 45 years of age (Table 7).

In two cases, symptoms had been present in the neighborhood of forty years. Thirty-eight per cent. of the patients, however, had been ill for one year or less (Table 8).

In forty-seven cases the infection was bilateral. In fifteen cases the infection was limited to the left side, and in fifteen cases the infection was limited to the right side. Sixty-four cases showed bladder disturbances.

TABLE 8.—DURATION OF SYMPTOMS IN GROUP 3

Duration	No. of Cases
Under 1 month	8
Between 1 month and 1 year	20
Between 1 year and 2 years	8
3 years	5
4 years	2
5 years	3
6 years	4
7 years	3
8 years	1
9 years	1
10 years	4
Between 11 and 15 years	7
Between 16 and 20 years	3
Between 21 and 25 years	1
Between 26 and 30 years	0
Between 31 and 35 years	0
Between 36 and 40 years	2
Between 40 and 44 years	0

Pus was present in the urine in seventy-three cases. Blood was present in forty-six cases; albumin was present in fifty cases, and infection of the urine was demonstrated in all of the cases. In four of the cases the urine was macroscopially clear, and on careful examination, after prolonged centrifugalization, no pus cells were found. These are cases in which it is most important that a catheterized specimen be obtained and immediately centrifuged and stained for infection, the immediate direct slide smear being of the greatest value, for in one case in which no urinary antiseptics were being given by mouth, a large number of bacilli were demonstrated by the ordinary staining methods. Yet, on three occasions in which cultures were immediately made from the same urine directly on agar and bouillon, no growth occurred.

In connection with the clinical studies of the urine and pyelonephritis, some interesting cases have been observed of which one reads very little. In some instances in which a typical picture of parenchymatous nephritis was present, with large amounts of albumin in the urine, associated with edema, catheterized bladder urine in addition showed marked infection. In some of these cases the body had been searched throughout for various types of focal infection, and, strange to say, a bacteriologic study of the urine had been neglected. It is possible that infection had occurred in association with a typical parenchymatous nephritis; but if this is the case, infection of the kidney would seem to have played a large part in the renal destruction, for in one of the cases showing a heavy cloud of albumin, the left kidney had been virtually destroyed, and the right reduced considerably in its functional capacity. The kidney itself should be more often considered as a source of its own focal infection, if focal infection bears any great relation to nephritis.

Pain in these cases of pyelonephritis was thus distributed: In left renal infection pain was present in the left renal region alone in seven cases. It was present in the epigastrium alone in one case. In seven cases there was no pain.

In right renal infection, pain occurred in the right renal region in six cases and across the renal regions in one case. In one case of right renal infection pain was limited to the epigastrium, and in two casese there was pain in the right upper abdomen associated with pain in the right renal region. Five patients were without pain.

In the bilateral cases of renal infection pain in the back alone occurred in fifteen cases. This pain was thus distributed: right renal region, four cases; across both renal regions, eight cases; across the lower back, three cases.

Pain in the abdomen alone occurred in four cases thus distributed: right lower abdomen, two cases; pain in the epigastrium, two cases. There were three cases in which pain in the back was associated with abdominal pain. In two of these cases there was pain in the right renal region associated with pain in the right lower abdomen, and in one case, pain in the left upper back associated with pain in the left lower abdomen.

In twenty-five of the bilateral cases there was absence of either abdominal or renal pain.

In only two instances were abdominal operations carried out with the idea of relieving abdominal pain in this series of cases of pyelonephritis. In one case of bilateral pyelonephritis, the gallbladder was drained on account of pain in the right upper abdomen and right back. In one case of right-sided pyelonephritis, the appendix was removed on account of pain in the right lower abdomen.

In this group of cases, as in renal tuberculosis, abdominal pain is of a much less severe type than in hydronephrosis or stone, and the severity of the pain has evidently been one of the principal factors in leading to unnecessary abdominal operations.

GROUP 4. HYDRONEPHROSIS AND HYDRO-URETER

Hydronephrosis and hydro-ureter comprised twenty-six cases. The youngest patient was between 10 and 15 years of age, and the oldest between 60 and 64. Eleven patients, or 42 per cent., were between 30 and 40 years of age on admission (Table 9).

TABLE 9.—AGE OF PATIENTS IN GROUP 4

Age	No. of Cases
From 10 to 14 years	1
From 15 to 19 years	1
From 20 to 24 years	1
From 25 to 29 years	2
From 30 to 34 years	6
From 35 to 39 years	5
From 40 to 44 years	3
From 45 to 49 years	5
From 50 to 54 years	1
From 55 to 59 years	0
From 60 to 64 years	1

Six of the twenty-six patients had had symptoms between ten and fifteen years on admission (Table 10).

TABLE 10.—DURATION OF SYMPTOMS IN GROUP 4

Duration	No. of Cases
Under 1 month	1
Under 1 year	4
Between 1 and 2 years	2
2 years	0
3 years	1
4 years	0
5 years	2
6 years	2
7 years	1
8 years	1
9 years	1
10 years	2
Between 10 and 15 years	0
Between 15 and 19 years	2
Between 20 and 24 years	0
Between 25 and 29 years	0
Between 30 and 34 years	0
Between 35 and 39 years	1

Fourteen cases were limited to the right side, ten to the left side, and one case was bilateral. There was one case in which there was hydro-ureter in a pelvic ectopic kidney.

The urine showed pus in nineteen cases, blood in seventeen cases, albumin in fifteen cases, and was infected in thirteen cases.

Bladder disturbances were present in thirteen of the cases.

The pain in the cases of right hydronephrosis was found to be thus distributed: Pain was limited to the abdomen in four cases. Two of these presented pain in the right upper abdomen, and two of them pain in the right lower abdomen.

In two cases of right hydronephrosis, the pain was limited to the back, and was situated at the right renal region.

In four cases of right hydronephrosis, pain in the back was associated with pain in the right upper abdomen, and in four other cases pain in the right back was associated with pain in the right lower abdomen.

TABLE 11.—HISTORY OF PATIENTS WHO HAD BEEN OPERATED ON ON ACCOUNT OF SYMPTOMS DUE TO HYDRONEPHROSIS

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Operations
	Right Hydronephrosis							
1	Right upper abdomen	Absent	16 yrs.	+	+	+	+	Gallbladder drainage
2	Right lower abdomen and right back	Present	8 yrs.	+	+	+	+	Appendectomy, abdominal exploration
3	Right upper abdomen	Present	1 mo.	+	+	+	+	Appendectomy
4	Right lower abdomen and right back	Absent	2 yrs., 3 mos.	—	—	—	—	Nephropexy
5	Right lower abdomen and right back	Present	13 yrs.	—	—	—	+	Appendectomy
	Left Hydronephrosis							
1	Right upper abdomen and right back	Absent	15 yrs.	+	—	+	+	Gallbladder drainage; nephropexy; appendectomy

TABLE 12.—HISTORY OF TWO PATIENTS NOT OPERATED ON BUT IN WHOSE CASES ERRONEOUS DIAGNOSES HAD BEEN MADE

Case No.	Distribution of Pain	Bladder Disturbances	Duration	Urine: Pus	Urine: Blood	Urine: Albumin	Urine: Infection	Diagnosis
	Hydro-Ureter of Ectopic Kidney							
1	Colicky pain in left lower abdomen	Absent	36 yrs.	+	+	+	—	Ptomain poisoning
	Bilateral Hydronephrosis							
1	Epigastrium and left lower abdomen	Present	10 yrs.	+	+	+	+	Appendicitis

The distribution of pain in left hydronephrosis showed that the pain in five instances was limited to the left upper back.

In one case, pain in the left renal region was associated with pain in the left upper abdomen.

Only one case of bilateral hydronephrosis was observed. In this there was pain in the epigastrium and left lower abdomen without any pain in the back.

In this group is included one case of pelvic ectopic kidney, in which there was hydro-ureter. The distribution of pain in this case was over the lower abdomen, a little to the left of the median line. The pain was colicky in character, and in no way suggested a renal disturbance. The case was found on routine roentgenologic examination with catheters in place, and was studied because the urine showed a few red blood cells.

The severe pain of hydronephrosis has led to various operative procedures in this group. Six of the cases included here were associated with stone, and have been included under Group 1. Of the remaining twenty cases, operation had been performed in six directly for the relief of pain due to hydronephrosis.

In addition to the six cases in which various operations had been performed, one other case had been diagnosed as appendicitis, and another as ptomain poisoning (Table 12).

GROUP 5. TUMORS OF THE KIDNEY

Group 5 comprises four cases, the respective ages of the patients being 30, 38, 40 and 41. The duration of symptoms was six weeks, six months, two years and five years. In two instances both kidneys were involved in large tumor masses. One of these presented pain in the right upper abdomen, the other, colicky pain across the upper abdomen and left lower abdomen. *Neither showed pain in the back.* There was one case of tumor of the right kidney which was associated with stone and large hydronephrosis. This case showed pain in the right back without any associated pain in the abdomen. There was one case of hypernephroma of the left kidney which presented pain in the left renal region, but no abdominal pain.

Only one of the cases showed bladder disturbances.

All of the cases showed blood, one showed pus (case associated with stone and hydronephrosis), three showed albumin, and none were infected.

In none of the cases of tumor of the kidney had any previous operations been performed for the relief of pain.

GROUP 6. POLYCYSTIC KIDNEY

Group 6 comprises only one case. At the time of admission, an exploratory operation disclosed a perirenal abscess about a polycystic kidney. The patient was a man, aged 50, who complained of pain in the left renal region which had been present for three years. There was no abdominal pain or bladder disturbances. The urine showed blood, pus and albumin. No previous operation had been performed for the relief of pain.

GROUP 7. CONGENITAL MALFORMATIONS OF THE KIDNEY

This group comprises three cases, including one case of pelvic ectopic kidney which has already been included under hydronephrosis; another case of hydronephrosis of the superior pole of a completely duplicated left kidney, and a third case of a double

renal element on the left side in which each pelvis showed a primal division into caudal encephalic portions. There was no complaint of abdominal pain or pain in the back. No operation had been performed for the relief of pain in any of these cases.

GROUP 8. NEPHROPTOSIS

This group comprises three cases. The only cases included in this group are cases of nephroptosis in which it was believed that the displacement alone was responsible for the pain. There were two cases on the right side. One of the patients complained of pain in the right lower abdomen, and one, of pain in the right back associated with pain in the right upper abdomen. Both of these patients had been operated on. One had had an appendectomy, and the other, removal of a right ovarian cyst, and subsequently drainage of the gallbladder. In the bilateral case the patient complained of sore lumps in both sides of the abdomen, and there was no pain in the back. This patient had not been operated on.

GROUP 9. CHRONIC NEPHRITIS

Complete urologic investigation has been carried out for one reason or another in five cases of chronic nephritis. One of the cases was associated with stone, and has already been included under Group 1. Cases of this group are necessarily of but little interest for the subject under consideration. Only one of the patients suffered with pain, and this was a girl with chronic parenchymatous nephritis, showing edema and large amounts of albumin in the urine. She was 25 years of age, and had been ill for two years. She complained constantly of severe pain in the region of the left kidney. At no time was the urine infected, nor could any cause for the pain be discovered other than pain probably associated with swelling of the kidney.

GROUP 10. PYONEPHRITIS

This group comprises two cases, the characteristic features of which were toxemia rather than pain. Both patients complained of pain in the renal region of the back.

GROUP 11. CYSTITIS

There were twenty-nine cases of cystitis in which the infection was limited to the bladder. Cases were studied to rule out the presence of infection in the upper urinary tract. This group is obviously of no value in the question of distribution of abdominal pain.

GROUP 12. MISCELLANEOUS

Group 12 comprises fifty-two cases. One of the cases subsequently at necropsy showed a ruptured aneurysm of the left renal artery. When the patient was studied he complained of severe pain in the left renal region. Another patient showed a large cyst of the left kidney lined with a calcareous deposit fully 0.5 cm. in thickness. This patient presented severe pain in the left back and left lower abdomen. There were two cases in which the left kidney was totally dead, and from the histories it was concluded that in previous pelvic operations the ureters had been ligated. One of these cases presented aching pain in the left back. The remaining cases were studied for various reasons, usually as a matter of differential diagnosis, to differentiate the kidney from various intraperitoneal conditions, abdominal tumors, etc. One interesting case was studied for the purpose of differentiating a carcinomatous mass within a diverticulum of the descending colon, from the left kidney. Cases of pyonephrosis have been classified under renal tuberculosis, stone and hydronephrosis. It is striking that the history in these cases shows a marked change of symptomatology with the onset of acute renal inflammatory changes. In association with large pus sacs with perirenal inflammation, the symptoms have in many instances taken a sudden turn, so that they were almost entirely gastric: nausea, vomiting and pain. It is these cases which are often spoken of as cases of ptomain poisoning.

SUMMARY

A review of these cases shows that the most practical conclusions as to the distribution of abdominal pain in diseases of the kidney and ureter can be best arrived at by a study of those diseases which are most constantly characterized by pain, namely, stone and hydronephrosis. It will be noted from Group 1, stone in the kidney and ureter, that the distribution of the pain was purely abdominal in 28 per cent. of the cases, and that in 20 per cent. of the cases it was so misleading as to lead to abdominal operations.

The figures from the tables on hydronephrosis are even more striking. Excluding the six cases of hydronephrosis which are associated with stone, it will be noted that abdominal operations had been performed in 30 per cent. of the remaining cases, for the relief of pain which was subsequently demonstrated to have been of renal origin. The symptomatology of hydronephrosis is often obscure and misleading, and it is in this group of cases that the urine is so often practically normal.

It is obviously impracticable to carry out urologic examinations as a routine. There are, however, certain well defined indications, and while abdominal pain is not one of them, it is by no means a contraindication, and becomes a definite indication when the urine shows abnormalities. In obscure cases of abdominal pain, pyelographic studies should be more frequently made.

CONCLUSIONS

Emergency of operation in obscure abdominal pain does not often depend on severity of the pain alone. Some of the severest types of abdominal pain have as their origin diseases of the kidney and ureter.

ABSTRACT OF DISCUSSION

Dr. William E. Stevens, San Francisco: In many cases the symptoms are misleading. In one of my cases the roentgenogram disclosed a shadow in contact with the bismuth catheter in the ureter. At operation the tip of the appendix was found attached to the ureter. In the appendix was a concretion which gave the shadow of a ureter stone in the roentgenogram. A child, aged 13, complained of slight pain in the region of the appendix and intense pain in the right lumbar region. The roentgen ray showed a slight hydronephrosis of the right kidney and a stone in the left kidney. A surgeon removed an appendix which was not definitely pathologic. Strange to say, all symptoms disappeared following this operation. A third patient complained of severe pain in the right lower abdominal quadrant. Tenderness was marked over McBurney's point and there was a slight degree of rigidity. The appendix was removed. It was normal and the pain was unrelieved. Examination of the urine revealed a large number of pus cells and the symptoms disappeared following treatment for pyelitis of the right kidney.

Dr. W. F. Braasch, Rochester, Minn.: The various lesions occurring in the abdomen frequently demand the special data made available by the urologist in order to arrive at an exact diagnosis. The ideal status of the urologist is that of an

internist or general surgeon who specializes in diseases involving the urinary tract. He should also be more closely related to the neurologist, since disease of the central nervous system is frequently recognized and identified largely by means of cystoscopic examination. The present status of the urologist which places him aloof in his specialty and separates him from general abdominal diagnosis is unfortunate. The urologist should be at the beck and call of the internist and the internist should be similarly associated with the urologist. The ideal status would be to have the urologist and the internist work as a unit in every case of abdominal disease. There is probably no area in the abdomen where so great error occurs in diagnosis as in the urinary tract. The subjective symptoms with lesions involving the urinary tract may so closely simulate those occurring with lesions in the adjacent organs that they are frequently of no practical diagnostic value. Fully one-half of the patients with lesions in the right kidney and ureter whom I have observed have had previous operations on adjacent organs, while the condition in the ureter and kidney have not been recognized. It is our custom at the Mayo Clinic to refer every patient with abdominal pain which is not definitely identified by general physical examination for a roentgenographic examination of the urinary tract and later to the urologist for further data. The same procedure is followed also in every patient with (1) a history of pyuria or hematuria, (2) where on urinalysis pus or blood cells are found in the course of routine urinalysis, irrespective of the other symptoms or physical data, and (3) every doubtful abdominal tumor.

DR. HARRY A. FOWLER, Washington, D. C.: I have gained one important impression from Dr. Cecil's paper: namely, in cases of abdominal pain, when in doubt, suspect the kidneys. That is a safe rule to follow in any case of diffuse abdominal pain. We all have seen patients operated on for various supposed abdominal lesions, and find later that the real trouble was in the kidney. For purposes of convenience it is well to group patients with renal calculous disease into three groups: first, those with silent stone; second, those suffering with typical renal colic attacks; and third, those presenting referred pain with few or no symptoms referable to the kidney itself. This is the most interesting group and the one presenting the greatest difficulties in diagnosis. In one case of stone in the ureter the pain was referred to the opposite kidney. Complete transference of pain from the diseased to the healthy kidney has been denied. However, this patient was suffering with a typical attack of rightsided renal colic. Examination by roentgen ray and ureter catheter showed a healthy right kidney and a stone in the upper left ureter. Removal of the stone cleared up the symptoms. This patient now has a recurrence of stone in the left kidney with all symptoms referred to the left side.

DR. ABRAHAM HYMAN, New York: The most difficult cases to diagnose are those in which the pain is referred to the appendix and the gallbladder region. In the chronic cases in which the differential diagnosis is in doubt one has time for roentgen-ray examination and cystoscopy. The difficulty arises in the cases with acute pain in the right iliac fossa. One must determine immediately whether the attack is due to an intraperitoneal condition or to stone in the ureter. It is my practice in such cases to cystoscope the patient immediately. Occasionally, an attack of acute cholecystitis will simulate a renal condition, such as in one case which I saw. The symptoms were typical of acute cholecystitis but it proved to be a case of multiple abscesses in the kidney tissue, with a large perinephritic abscess anterior to the kidney. Occasionally two conditions may be associated at the same time. A patient was known to have a renal, ureteral, and vesical tuberculosis. He was admitted to the hospital with an attack of pain in the right iliac fossa, which at the time was thought to be due to a tuberculous ureteritis. Operation revealed an acute gangrenous appendicitis.

DR. ALBERT E. GOLDSTEIN, Baltimore: A group of cases that very frequently gives the same referred abdominal symptoms are the ureteral strictures. In many instances the urine examination may be positive. A calculus is often suspected and never found. A stricture is located.

DR. ARTHUR B. CECIL, Los Angeles: I believe that at the Mayo Clinic roentgen-ray examinations of the urologic tract are deemed advisable whenever the urine shows blood or pus associated with abdominal pain which is not definitely localized; or whenever the urine shows pus or blood, or whenever there is pain suggestive of renal or ureteral disease even though the urine be normal. Complete urologic examinations would seem to be advisable in most of these cases. In regard to ureteral stricture, I have included these cases under the group of hydronephrosis and hydro-ureter.

A DENTAL CLINIC FOR CHILDREN IN A SETTLEMENT*

HAIDEE WEEKS GUTHRIE, D.D.S.
NEW ORLEANS

The first dental clinic for children in a settlement was established in the New Orleans Dispensary for Women and Children. The clinic is for the poor without regard to race, creed or color. The clinic is now caring for 1,500 children in the immediate neighborhood, and others between the ages of 2 and 8 years from all parts of the city and adjoining parishes. The clinic is able to do this because of the excellent cooperation of the social service workers, who gather the children from the neighborhood and return them at stated times for necessary treatment and examination. Kingsley House is our first settlement house, and the dispensary is in the settlement.

The New Orleans Dispensary for Women and Children is a fifty bed hospital. We have seven allotted beds in the children's ward, and at times have taken care of thirty-five children. The nurse in charge of the children's ward is punctilious in the care of the mouths of the children. The children are given regular and systematic care of their teeth with a toothbrush, which is of a size adapted to each mouth, a point very often overlooked. Physiologic solution of sodium chlorid, for a wash, is used after each meal and at bedtime.

This report is based on the case records of more than 8,000 children. In point of age, the patients ranged from infancy to the sixteenth year.

The data collected showed the age, sex, race, nutrition and the history of previous infections. The grade in school and whether or not the child was a "repeater" were also recorded. The number of deciduous and permanent teeth present, as well as the existence of cavities, abscesses or sinuses, and their location, were noted in every case.

Special dyscrasias, when existent, were also noted, as well as abnormal frenum, fifth cusp and geographic tongue. Roentgen findings and the results of Wassermann reactions were also recorded when these examinations were made.

So far as the social workers were able to observe them, a marked reduction in the number of cases of infectious diseases occurred in the children who "belonged" to the clinic. There has not been an epidemic in this neighborhood since the clinic was started.

Two special groups of children were studied: one group known to be tuberculous and one made up of proved subjects of syphilitic infection. These were observed to determine the value of thorough dental care in these conditions. In the tuberculosis group, 95 per cent. of the deciduous teeth had to be removed

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

before the eighth year, on account of abscesses. In the syphilitic group, only 40 per cent. had to be removed. More cases of retarded absorption of the deciduous roots and later eruption of the permanent teeth were noted in the syphilitic group than in the tuberculous. In nine cases of the sixty, at the thirteenth year, I had records of roentgenograms made to determine the condition of the deciduous roots. The roentgenograms disclosed a beginning absorption. In these nine cases the ten deciduous teeth (right and left upper and lower, first and second deciduous molars) were extracted, first on one side, upper and lower, and then, in about six weeks, on the opposite side. In a few months the permanent teeth were erupted in correct position.

Ulcerative stomatitis occurred with greater frequency among the children who came from the parochial (religious) schools. These patients were all isolated in the hospital and treated on the basis of using bactericidal measures directed against an anaerobic organism. No deaths occurred; several cases of marked deformity, as the result of extensive operative procedure necessary to get rid of the infection, resulted.

In cases of ulcerative stomatitis, it is our practice to substitute a dichloramin-T solution in water, 1:1,000, for the physiologic sodium chlorid; and a mixture of potassium chlorate, dilute hydrochloric acid and glycerin is given internally, every two hours, with a nourishing diet.

We find more of these cases during the months of January and February, following the usual winter diseases in this climate, when the resistance is low and there has been poor or very scanty nourishment and no mouth hygiene. In 80 per cent. of these cases there was great loss of both hard and soft tissue. Our cold weather begins in November and December. The infections which are continued through six winter months in the children in a more northern climate are experienced by our children during only two months, November and December. The children lack the necessary green vegetables and fruits during these months, and the milk is less rich and more expensive. There is a relative deficiency of fat-soluble A vitamins and water-soluble B vitamins during these months. This,

TABLE 1.—ERUPTION OF THE BICUSPID

Age	No. of Bicuspids	Cases
6 years	1	134
7 years	1	49
7 years	3	123
8 years	2	236
8 years	3	240
9 years	7	131
9 years	8	336
10 years	8	29
		1,288

while not producing actual lesions of scurvy, certainly is a factor in bringing about an impairment of nutrition sufficient to account for the diminished cell resistance, a predisposing cause, at least, of the more extensive ulcerative processes we see during the winter months.

On one occasion, a child of foreign-born parents was confined to the hospital with a mouth infection, and on my next visit to the ward, I found *all of the children* in this family, three in number, all under 8, in the children's ward, where they had been sent by their parents—"a fine place to stay." The parents knew the children would be well fed and cared for, and would be out of their way during that time. It is surprising how many times the mother will bring the child to the clinic and ask whether they could be left for treatment. There is no horror in the mother's mind of this neighborhood clinic or of the hospital.

Acute abscess in the sense that is conveyed by the use of this term in dental literature was never seen in this series. Undoubtedly there must be an acute phase of the lesion; but evidently the subjective discomfort at this stage does not bring the child to the dentist. In the child, the peridental membrane really exists as a definite structure differentiated from the bony walls which support it. Later, it takes on a bony structure

TABLE 2.—ERUPTION OF FIRST MOLAR

Age	No. of Molars	Cases
3 years	4	1
4 years	1	11
4 years	2	12
4 years	3	1
4 years	4	13
4½ years	1	11
5 years	1	214
5 years	2	211
5 years	3	163
5 years	4	212
6 years	4	434
		1,288

by the migration of bone cells into the stroma and becomes itself truly bony.

The question of the absence of acute abscess in the child's mouth has given rise to much thought and study. Why do we not hear the child crying and screaming with the pain in the *deciduous* teeth, as we do with the pain in disease of the first permanent molar? We encounter acute abscess and toothache in the first molar. In the child under 6, we often find a swelling, pus and perhaps a sinus before the child has given any sign of inconvenience.

The variation in structure and progressive hardening of the peridental membrane is probably the explanation of the variation in the occurrence of acute abscess in childhood as contrasted with the more advanced years. Apparently it is only after fistula, sinus or free pus discharge is established that the child comes for help.

In 70 per cent. of the cases the tooth may be saved between the fourth and sixth year, by forcing a saturated solution of silver nitrate through the root and sinus, followed by formaldehyd solution, and sealing with gutta-percha for two weeks. Sometimes it takes two months of treatment, but we have maintained the tooth in usefulness for four or five years. Following the abscesses of the deciduous molars, it is surprising how quickly the bicuspid erupts. For example, a lower right first deciduous molar abscessed at the age of 5 years. It was treated after this plan, cured (roentgenographed many times), and filled with amalgam. After two years, that patient, now aged 7 years, came with tooth loose and was roentgenographed again. The roentgenogram revealed completely absorbed roots, and a perfectly formed bicuspid erupted. At the age of 10, the patient still has eleven deciduous teeth, the last roentgenograms showing very little absorption of the deciduous roots (another syphilitic case).

Following these abscess conditions we have a rapid absorption of the deciduous tooth and a correspondingly rapid formation of the permanent tooth. The irritant which stimulates the osteoclasts in the absorption of the deciduous tooth also stimulates the osteoblasts in the formation of the permanent tooth. These conditions we find between the ages of 3 and 5. If these teeth are erupted in infancy earlier here than in

V. 19

a more northern latitude, the earlier eruption time may account for the earlier decay.

The eruption of the bicuspid furnishes striking record of the earlier development in New Orleans.

The study of the eruption of the first molar is interesting. In New Orleans, we cannot call it the six-year molar. Its eruption is from eight to twelve months earlier here than in the Northern states.

An appreciation of the principles of the child's psychology is fundamental in this work and more or less difficult to formulate. Results are absolutely predicated on an understanding existing between the one who is charged with the work and the patient. Here, more than in other fields, discipline is essential.

Success in the management of a child's dental clinic depends also on securing the return of the child regularly for inspection and treatment, if treatment is needed. The child must feel that the clinic exists for him and that he has become a member of the organization. The feeling of mutual interdependence can be achieved best by placing the clinic near the child's home. It should become a necessary part of his life, and he must feel that he must attend as he attends school or church. A location near his home makes easier the task of the social worker and really economizes the time of the dentist.

Without the lessons in prevention and instruction to the children in prophylaxis and without the close liaison that has been possible through the location of my own clinic near to, and in cooperation with, Kingsley House, the social service center of the neighborhood, my own task would have been beyond my power to perform.

1206 Maison Blanche Building.

PROGRESS IN DENTAL EDUCATION*

H. E. FRIESELL, B.S., D.D.S., LL.D.
PITTSBURGH

Dentistry as an organized profession dates back only to the year 1839. During the latter part of that year was first issued the *American Journal of Dental Science*, the first periodical published in the field of dentistry. Feb. 1, 1840, a charter was granted by the legislature of Maryland to Drs. Hayden, Harris and others incorporating the first dental college in the world, the Baltimore College of Dental Surgery; and on the 18th of August in the same year, the first dental society was formed in New York City and called the American Society of Dental Surgeons. During the session of 1837-1838, Dr. Horace H. Hayden delivered a series of lectures on dentistry in the Medical College of the University of Maryland, and undoubtedly it was from this germ that organized dental education sprang.

That there was great need for such organized instruction in dentistry was evidenced by the immediate and continued success of the Baltimore College of Dental Surgery, and the early establishment of many other schools in all parts of the country.

In 1907 there were fifty-six dental schools in the United States employing 676 professors and 653 special and assistant instructors, and enrolling 6,876 students. The graduates of these schools in the year 1906 numbered 1,624.

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

For many years after the opening of the first school the dental course consisted of two four-month lecture courses in separate years; and a practitioner of five years or more could be graduated after one four-month course. A few years later the course was extended to two years of five months each. In 1884 a national organization of the dental schools was formed—the National Association of Dental Faculties—and as a result of the efforts of that body, in 1892 the course was lengthened to three years of five months each, and shortly thereafter to seven months yearly.

TABLE 1.—DENTAL STATE BOARD EXAMINATIONS, 1910-1919

Year	Number of Graduates	Number Examined	Passed	Failed	Percentage of Failures
1910	1,648	1,295	1,102	193	14.9
1911	1,742	1,372	1,211	161	11.7
1912	1,940	1,507	1,274	233	15.4
1913	2,022	1,564	1,320	244	15.6
1914	2,254	1,783	1,380	403	22.6
1915	2,289	1,874	1,568	306	16.3
1916	2,894	2,459	2,029	430	17.4
1917	3,056	2,596	2,286	320	12.3
1918	3,388	2,918	2,510	408	14
1919	3,567	3,141	2,667	474	15
Totals	24,905	20,509	17,327	3,182	15.5

In 1893 the dental teachers of the country formed a national body which flourishes today under the name of the American Institute of Dental Teachers. As a result of the efforts of these two organizations, in 1917 the dental course was extended to four years of eight and one-half months each year.

Prior to the establishment of the first dental school, dental training could be obtained only in the office of a preceptor, and for many years thereafter, until all sections of the country were fairly well provided with schools, this method of studying dentistry existed. The United States Census Bureau's published statistics show that in 1902 there were 28,142 practicing dentists in the country, and of that number only 16,831 were graduates of dental schools. Eventually, however, all the states adopted dental laws, requiring a college education to practice dentistry, and state boards of dental examiners were appointed in all states to pass upon the qualifications of graduates who applied for licensure.

With few exceptions the dental schools of this country were organized and maintained by private enterprise for many years before various universities saw fit to include dental education in their field. In some cases the dental schools of universities were organized by the university, but in most cases existing private institutions were taken over and became organic parts of the university.

The influence of the examining boards and their national organization, the National Association of Dental Examiners, has had a salutary effect in encouraging private schools to provide adequate education for their students. Approximately seventeen years ago the National Association of Dental Examiners established a tabulation of the reports of the state board examinations of the output of all the dental schools, with the result that the quality of dental education has been raised very markedly.

A summary of the tabulation of dental state board examinations for the last ten years is given in Table 1.

The best information available indicates that there were 36,823 dentists practicing in the United States in 1908; and the figures for 1919 are approximately 44,000. During the period from 1908 to 1919, inclusive, there were approximately 28,500 graduates.

These figures show an average yearly graduation of 2,375 for the twelve year period, and a yearly wastage of 1,777; a net annual gain in dental practitioners of 598.

The figures given in Table 2 indicate the growth in schools and enrolment at periods during the last forty years.

TABLE 2.—GROWTH IN SCHOOLS AND ENROLMENT IN FORTY YEARS

Year	No. of Dental Schools	No. of Students	No. of Graduates
1880	16	720	396
1889	27	2,496	943
1900	54	7,928	2,039
1907	57	6,9 9	1,754
1919	46	*	3,397†
1920	46	9,302	‡

* No figures.
† Last three-year class.
‡ Year not finished. Senior students enrolled, 1,042.

In view of the astonishing increase in the demand for dentists that has arisen during recent years, the existing dental schools will be taxed far beyond their normal capacity to meet such demand, and established universities in logical centers should recognize the necessity for providing adequate dental education for the communities they now serve in other fields of education.

A glance at a table of enrolment of students in the existing dental schools indicates the totals for the year 1919-1920 given in Table 3.

TABLE 3.—ENROLMENT IN THE FORTY-SIX EXISTING DENTAL SCHOOLS

Senior students	1,042
Junior students	1,8 5
Sophomore students	1,983
Freshmen students	4,392
Total enrolment	9,302

The small number of seniors is due to the fact that the class of 1919 was the last regular three year class, and many of the present seniors are hold-overs, or men who were in government service during the war. The unusually large freshman class also probably includes a certain percentage of students who would have entered school a year or two earlier but for the war.

In the matter of entrance requirements, dental education has passed through periods of evolution similar to that experienced by medical education. For the first half century of the existence of dental schools, virtually no preliminary education was required beyond that of "a good English education," which was fairly uniformly interpreted to be a grammar school education, or anything beyond. Beginning somewhere between 1895 and 1900, the schools began to request first one year of high school work for entrance; then two, and later three; but it was not until within the last ten years that graduation from a first grade four year high school has been made obligatory, and this has come about very largely through the efforts of the Dental Educational Council of America. The latter body was organized in 1909, and is composed of five representatives from each of the three national dental organizations then existing, namely, the National Association of Dental Examiners, National Association of Dental Faculties, and the National Dental Association.

The Dental Educational Council has made an exhaustive study of the conditions existing in dental education, and a thorough inspection of the dental schools of the country. At the outbreak of the war in 1917 this body had collected many valuable data bearing on the standing and efficiency of dental schools, and it was selected by the War Department as the best equipped agency to do such work, and at the request of the War Department and in cooperation with some of its representatives, a classification of the dental schools was made for and approved by the department, which was guided in its recognition of dental schools by the council's classification.

In the matter of curriculum, the schools have advanced from a very limited list of subjects that were taught largely didactically to a carefully graded and balanced course of study, well provided with laboratory work, which year by year has been approaching more closely the basic curriculum of medical education.

The guiding influence in dental education, which has been effective for the last decade, is the Dental Educational Council. On account of its tripartite composition, including examiners, educators and repre-

TABLE 4.—DENTAL SCHOOL ENROLMENT FOR THE YEAR 1919-1920

School	Year 1st	2d	3d	4th	Total
1. Northwestern University Dental School	265	74	61	47	447
2. College of Dentistry, Univ. of Minnesota	87	124	91	81	383
3. Vanderbilt Univ. School of Dentistry	48	13	9	6	76
4. Louisville College of Dentistry	34	21	20	19	94
5. Western Reserve University School of Dentistry	95	39	36	7	177
6. Chicago College of Dental Surgery	127	68	58	123	416
7. Univ. of Mich. College of Dental Surgery	186	70	64	34	374
8. Ohio College of Dental Surgery	49	17	15	19	100
9. Univ. of Calif. College of Dentistry	130	44	38	20	232
10. University of Iowa College of Dentistry	180	58	40	7	185
11. Indiana Dental College	84	51	40	..	175
12. Kansas City-Western Dental College	140	61	46	30	229
13. Univ. of Buffalo College of Dentistry	66	40	37	9	152
14. School of Dentistry, Univ. of Pennsylvania	254	112	123	51	540
15. Baltimore College of Dental Surgery	29	16	41	39	125
16. Philadelphia Dental College	84	30	26	23	163
17. Cincinnati College of Dental Surgery	12	..	..	1	13
18. St. Louis Dental College	58	19	38	5	120
19. Ohio State Univ. College of Dentistry	90	20	20	28	158
20. Washington University Dental Department	40	16	16	3	75
21. Univ. of Pittsburgh School of Dentistry	207	103	67	37	414
22. New York College of Dentistry	278	119	122	53	573
23. Univ. of Illinois College of Dentistry	108	28	27	17	194
24. Tulane Univ. College of Dentistry	37	16	13	4	70
25. College of Dental and Oral Surgery, N. Y.	168	116	108	29	521
26. University of Southern California, College of Dentistry	104	47	37	22	210
27. Colorado College of Dental Surgery	48	40	15	12	115
28. Tufts College Dental School	201	116	78	17	412
29. Georgetown Univ. Dental Department	51	16	22	24	115
30. Creighton Univ. College of Dentistry	60	28	22	3	113
31. Med. Coll. of Virginia Dental Department	45	17	16	4	82
32. Univ. of Tenn. College of Dentistry	15	13	6	20	54
33. Univ. of Maryland Dental Department	50	23	23	14	110
34. Harvard University Dental School	79	39	36	26	180
35. George Washington University, Department of Dentistry	21	11	19	14	65
36. North Pacific College of Dentistry	101	61	49	10	311
37. Marquette University Dental School	168	92	48	..	308
38. Atlanta-Southern Dental College	119	47	40	10	221
39. Loyola Univ. School of Dentistry	15	10	5	3	33
40. Univ. of Neb. College of Dentistry	71	20	9	9	109
41. College of Physicians and Surgeons, Dental Department	27	20	38	28	113
42. Texas Dental College	20	4	3	30	57
43. Baylor University	21	11	26	9	67
44. Howard University Dental Department*	110	30	38	37	215
45. Meharry Dental College*	100	46	35	53	290
46. Univ. of West Tenn., Dental Department*	8	7	7	8	30
Totals	4,392	1,883	1,885	1,042	9,302

* Schools for negroes.

sentatives of the National Dental Association, this body has been able to bring about a constructive survey, inspection and classification of dental schools that has produced great advances in every phase of dental education. The work has been done along lines parallel to that of the Council on Medical Education and Hospitals, with the result that dental education

today is on a far better foundation and a more uniform basis than it has ever been before.

At present the council is revising its requirements for Class A schools, and is preparing a recommended curriculum that will closely approximate the schedule given in Table 5.

TABLE 5.—SUGGESTED STANDARD SCHEDULE FOR FOUR YEAR COURSE IN DENTISTRY, WITH PRELIMINARY REQUIREMENT OF FIFTEEN HIGH SCHOOL UNITS

	Hours		
	Lectures or Recitations	Laboratory	Total
FRESHMAN			
English	64	...	64
Physics	...	48	48
Chemistry, inorganic	64	128	192
Biology	32	64	96
Anatomy	32	96	128
Histology	32	64	96
Dental anatomy	16	96	112
Operative technics	16	96	112
Prosthetic technics	32	288	320
Technical drawing	...	48	48
Total	288	928	1,216
Hours per week	9	29	38
SOPHOMORE			
Chem., met., org., physiol.	32	128	160
Anatomy	32	128	160
Histology, dental	16	48	64
Physiology	64	...	64
Materia medica and pharmacology	32	48	80
Bacteriology	32	96	128
Operative technics	48	96	144
Prosthetic technics	32	288	320
Total	288	832	1,120
Hours per week	9	26	35
JUNIOR			
Physiology	32	48	80
Physical diagnosis	16	...	16
Pathology, general	32	48	80
Pathology, dental	32	48	80
Surgery	16	...	16
Anesthesia	16	...	16
Radiography	16	...	16
Mouth hygiene	16	...	16
Orthodontia	16	32	48
Comp. dent. anat.	16	...	16
Operative dentistry	32	...	32
Prosthetic dentistry	32	96	128
Clinic	...	576	576
Total	272	848	1,120
Hours per week	8½	26½	35
SENIOR			
Pathology, dental	32	...	32
Oral surgery	32	64	96
Orthodontia	32	...	32
Operative dentistry	32	...	32
Prosthetic dentistry	32	...	32
Jurisprudence, history, ethics, economics	32	...	32
Seminar	32	...	32
Clinic	...	832	832
Total	224	896	1,120
Hours per week	7	28	35

There is a tendency on the part of some schools to require a predental college year for entrance in 1921, and two predental years in 1926. In view of the great demand at present for dentists and the limited number of dental schools, the wisdom of requiring a predental year at this time is worthy of serious consideration.

The gradual development and enlargement of the dental curriculum, always more closely approaching that of medicine in many subjects; the advancement of the entrance requirements, and the general supervision of dental education by the profession as represented in the Dental Educational Council, will eventually bring dental education to a point at which the foundation training will be practically the same as that of medicine.

A STUDY OF THE EFFECT OF PULMONARY TUBERCULOSIS ON VITAL CAPACITY

FIRST REPORT *

F. W. WITTICH, A.M., M.D.
J. A. MYERS, PH.D., M.D.
AND
F. L. JENNINGS, M.D.
MINNEAPOLIS

In 1846, as Dreyer [1] has pointed out, John Hutchinson made use of the study of vital capacity of the lungs as an aid in the diagnosis of pulmonary diseases, especially tuberculosis. He demonstrated that cases of pulmonary tuberculosis showed a definite lowered vital capacity. Although Hutchinson's observations were accurate, some of his conclusions were erroneous, as proved later by Dreyer.

The studies of Dreyer were stimulated further during the recent war when the vital capacity measurement was a decisive factor in the selection and rejection of candidates for the British flying service. Standards were determined simply as a result of the vital capacity measurement on a number of successful pilots, regardless of the size of the man.

These observations enabled Dreyer "to establish definite relationships between vital capacity and body surface, body weight, stem length and chest measurement." He showed that the relations, in their order of importance, are as follows.

Vital capacity is a function of the weight and may be expressed in the formula:

$$\frac{W^s}{V.\,C.} = K_1,$$ in which W = net weight in grams; V. C. = vital capacity in cubic centimeters; s = approximately ⅔ (more accurately, 0.72); K = constant.

And since $\frac{W^s}{S} = K_2$, in which S represents the body surface, "it follows that the vital capacity is a simple function of the body surface, i. e., the smaller and lighter person with his relatively larger surface has a greater vital capacity per unit of body weight than the larger one." The relation of the other measurements, such as stem length or approximately the sitting height, and chest circumference to vital capacity are shown in his three simple formulas.

$$\frac{L^s}{V.\,C.} = K_3, \text{ in which } L = \text{stem length and } s = 2.$$

$$\frac{Ch^s}{V.\,C.} = K_4, \text{ in which } Ch = \text{chest circumference, and } s = 2.$$

$$\frac{L \times Ch}{V.\,C.} = K_5$$

The author proved these relationships and the fixing of standards by the observations of John Hutchinson, as well as his own on "sixteen men and boys carefully selected on account of their physical fitness and covering as widely different a range in weight, heights, etc., as possible". Later he made a careful study of measurements on a definite class of fourteen Oxford undergraduates, and also applied the formulas to Schuster's extensive series of measurements of vital capacity on 959 Oxford undergraduates, finding their results absolutely identical. His final values are:

$$\frac{W^{0.72}}{V.\,C.} = 0.69; \quad \frac{L^2}{V.\,C.} = 1.9; \quad \frac{Ch^2}{V.\,C.} = 1.82$$

* Read before the National Tuberculosis Association, St. Louis, April 23, 1920.

1. Dreyer, G.: Lancet 2:227 (Aug. 9) 1919.

Since, as Dreyer points out, the vital capacity varies considerably in different classes, modes of living, and during the war was influenced by the strain on flying men (continued high flying results in a temporarily decreased vital capacity) it is likely to vary with fatigue. This being so, it probably is true that certain disease conditions, especially those of respiration and circulation, would lead to a distinct decrease in vital capacity measurements. Thus, by means of a few fairly accurate standards arrived at so far, he studied the effect of pulmonary tuberculosis on the vital capacity of about 150 tuberculous patients at Brompton Hospital. His results are very promising and, to quote Dreyer's own words, he has been able, without seeing the cases or knowing anything about the diagnosis, but simply from measurements, recorded and sent to him by Dr. Burrell, of the vital capacity and the various body measurements mentioned above and by subsequent calculation, to classify these persons as normal individuals or as examples of mild, of moderate, or of severe pulmonary tuberculosis, in practically absolute agreement, as afterward appeared, with the clinical diagnosis and classification made at the time at the Brompton Hospital.

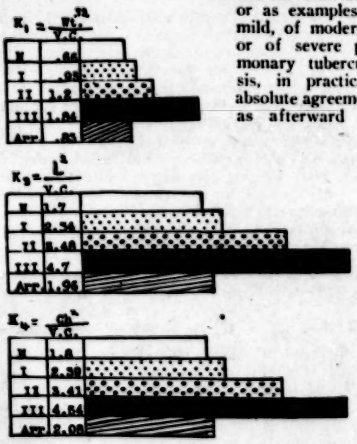


Chart 1.—Comparison of constants in cases of tuberculosis with those of normals. *N*, normal; *I*, Stage I, or incipient; *II*, Stage II, or moderately advanced; *III*, Stage III, or far advanced; *Arr.*, arrested.

Our observations consist of the vital capacity together with the stem length or sitting height and chest circumference taken at the same time of 174 patients, 117 being cases of disease of the respiratory tract, ninety of whom are definitely classified tuberculous ones, the majority being personally known sanatorium cases under close observation and confirmed by stereoroentgenograms when the classification or diagnosis was doubtful.

No effort was made beforehand to group the cases or classify them according to the stage of the disease. All measures are expressed in the metric system unless otherwise stated. The weight is net without clothing.

The sitting height, as the patient sat on a chair with a board protruding backward on the seat, was taken instead of the stem length as reckoned by Dreyer. The latter's method was to have the patient place the hands on the floor or board close to the body and, drawing up the knees, to raise himself for a moment and press the os sacrum as closely as possible against the scale. The latter method gives a more constant measurement of stem length; but since he and Ainley Walker have shown the results by the former method to be about 3 per cent. greater, our measurements for stem length have been reduced by 3 per cent. This was found to be more practicable among the class of patients with whom we worked.

The circumference was measured by a steel tape measure placed directly on the skin around the chest about the level of the nipple line in males, and at the greatest circumference in females. This measurement was taken with the patient's arms hanging loosely at the sides, muscles relaxed and while breathing normally. Expansion measurements proved of no value.

Most of the vital capacity observations were made in the forenoon long enough after breakfast so that a full stomach and the process of digestion would probably not influence the readings. Experiments of filling the stomach with malted milk, soups, etc., and comparing the readings after the ingestion of heavy meals showed that the latter had little or no influence over the vital capacity readings, at least not sufficient to rule out the practical value of the spirometer readings any more than the blood pressure readings in a case of hypertension after eating. However, it is best to make the observations at a uniform time and at least an hour after food has been taken.

While making our vital capacity observations on patients with a full stomach, it was our opportunity to study the effect of pregnancy on vital capacity in several cases as well as readings after delivery. It was thought that the increased intra-abdominal pressure with the high diaphragm would influence vital capacity. If the pregnancy was a normal one in a healthy woman, there was very little difference in the constants, and the vital capacity was about the same shortly after delivery as before. It appeared in these few cases that fatigue or exhaustion played a greater rôle than the mechanical one expected, and that the vital capacity became normal when convalescence was complete.

For the measurements of vital capacity, a spirometer of the plain water type was used at first; but after readings had been compared with the dry type, the latter was preferred as it offered a minimum of resistance to expiration. Our spirometer was tested frequently by an expert of a local gas company using gasometers, and was found to vary not more than 5 per cent. at any time. Gasometers are fairly accurate, but the smallest division on the scale is a hundred cubic centimeters. Spirometers will have to be perfected to the degree that the sphygmomanometer is today, when more accurate constants can be arrived at; but any constant may be determined for a given spirometer by making vital capacity observations on six or a dozen normal individuals and using the constant determined as the norm for that spirometer. A sliding scale is being made that will simplify the mathematical calculations to a degree. A description of this will be published later.

We wish to lay great stress on the value of carefully instructing the patients how to use the spirometer. Frequently it was necessary to illustrate what was wanted and to have the patient make several attempts before a reading was obtained that more nearly represented the greatest amount of air expelled by the greatest possible expiration after taking the greatest possible inspiration. The patient was not allowed to observe the spirometer readings, as it affected the results.

After the patients became accustomed to our visits and learned what was required, we checked up our former vital capacity readings by making a complete new set, so that we feel our results are as constant as any practical observations that could be made. The highest vital capacity blown was the one recorded.

The question naturally arises whether such a procedure is harmful to a tuberculous patient. In our experience there were no injurious effects. Before taking up the work, this question was asked Professor Dreyer also and he said that he knew of no harmful results. No measurements were taken of patients subject to hemorrhages or after recent hemoptysis. The average tuberculous patient daily goes through experiences, such as defecation or coughing, in which the intrapulmonary pressure is raised probably just as high. At any rate, it is highly improbable that if the existing pathologic condition was so precarious as to result in harm after a forced expiration, the tissues would not sustain life for a much greater period.

The accompanying table and charts include details of the 174 patients regarding weight, stem length, chest circumference and vital capacity. A closer analysis of these is interesting. It will be observed that our constants are virtually identical with those of Dreyer for the normal healthy individual. Although occupation, mode of living and the different classes influence the vital capacity, the patients in our study represented many occupations and different classes so that the constants are fairly accurate averages.

From these observations it would appear that pulmonary tuberculosis has a definite influence on the vital capacity, and that the latter decreases in relation to the body weight as the disease progresses, being in direct proportion to the amount of disease present. The reverse is also true, that as the lung heals and the patient's condition improves there is an increase in the vital capacity. In other words, the vital capacity in its relation to body weight is an absolute measure of a person's physical fitness.

Constants representing arrested cases very nearly approach normal standards, which fact increases the value of the readings of those with active disease; and it may be proved by active follow-up work that the vital capacity of the latter is an indicator of slight variation in the patient's condition before there is a noticeable change in his symptoms and signs. If so, periodic vital capacity readings when the patients are weighed would be the simplest method known of determining changes in the pulmonary condition.

Following the first readings, as reported in the table, measurements of twenty-four definitely tuberculous sanatorium patients were made after a period of from three to six months and results compared. Of the nine cases whose physical signs caused them to be reported in *worse condition*, eight showed all three constants indicating progressive disease, while readings for the ninth would suggest stationary or slight improvement. Of the eight cases whose clinical reports were *disease stationary*, the vital capacity blown in every instance indicated a slightly worse condition. Of the seven cases whose reports were *condition improved*, the measures of only two confirmed such report, and five showed constants pointing toward a stationary condition or slightly progressive disease. To be of value, such studies must cover a longer period of time; and a later report on this group will prove whether these second readings were a true index of the physical signs.

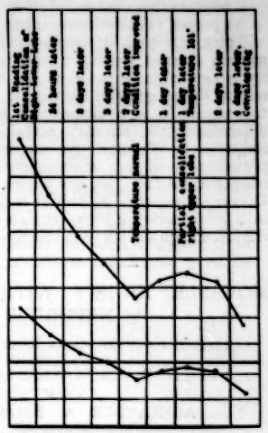


Chart 2.—Course of lobar pneumonia in a boy, aged 9; first (lower) base line, normal K_1; second (upper) base line, normal K_2 and K_3.

A study of the symptoms in connection with the lobe involvement has made it possible to divide the disease according to the vital capacity into at least six stages, and is a fair index of the amount of disease present. It is obvious that group studies of definite tuberculous patients are not so satisfactory as studying the individual case because the physical signs and symptoms may vary considerably in the same classified stage. In no instance was a patient with pulmonary tuberculosis able to blow the normal vital capacity, making a normal reading of value in differential diagnosis. As with any simple method or test, its value as an aid in diagnosis depends on its correlation with the history, symptoms and physical findings of the case.

It is of interest to note that the average constants of eight successful artificial pneumothorax cases practically coincide with the indexes for the far advanced "symptoms A" classification, and they are slightly more than twice as high as those of a normal individual. The few observations on the nontuberculous diseases of the respiratory tract, as well as those of circulation and metabolism, some of which are presented in the table, show that all influence the vital capacity. A few cases of glandular and bone tuberculosis are tabulated also.

VITAL CAPACITY CONSTANTS OF PULMONARY AND OTHER CASES

Tuberculosis	No. of Cases	K_1	K_2	K_3
Stage I: Symptoms A	13	0.86	2.22	2.19
Symptoms B	7	1.09	2.64	2.85
Totals	20	0.95	2.34	2.29
Stage II: Symptoms A	7	1.12	3.1	2.97
Symptoms B	10	1.33	3.59	3.44
Symptoms C	5	1.08	3.78	4.06
Totals	22	1.2	3.48	3.41
Stage III: Symptoms A	12	1.53	4.29	4.49
Symptoms B	18	1.9	4.5	4.34
Symptoms C	10	1.86	5.46	4.92
Totals	40	1.84	4.7	4.54
Arrested	8	0.83	1.98	2.08
Chronic bronchitis	14	0.94	2.95	2.34
Bronchial asthma	6	1.15	2.8	3.34
Bronchiectasis	4	0.95	2.42	2.41
Pulmonary abscess	1	1.55	5.19	3.97
Lobar pneumonia (convalescents)	2	1.05	2.59	2.67
Glandular tuberculosis	2	0.72	1.82	1.9
Pott's disease	3	1.35	3.36	4.06
Focal infection (secondary anemia)	4	0.89	2.32	2.14
Myocardial damage, toxic (electrocardiogram)	3	1.3	3.34	2.88
Chronic diabetes	3	1.04	2.92	3.5
Negatives	42	0.66	1.7	1.9

It was thought it might be of interest to present in a graphic chart the course of one of the lobar pneumonia cases. It is that of a boy, aged 9 years, who had increased consolidation on the ninth day, which then rapidly cleared up. The progress of the disease is definitely shown by the vital capacity constants, the lower curve being K_1 and the upper K_3 and K_4, which are practically the same.

It appears that the careful study of the vital capacity in its proper relationship to other body measurements will give important information in the diagnosis of pulmonary diseases, especially tuberculosis. It will aid in the accurate classification of the cases, and in determining the progress of the disease and the influence of treatment. It is a simple and harmless method of determining the patient's actual physical fitness or limitations. We may have sacrificed clearness in the presentation of our observations to the details of mathematical facts, but our object has been to confirm Dreyer's researches, as well as to stimulate an interest in a more accurate interpretation of simple available clinical data in the study of tuberculosis.

MOVABLE KIDNEY WITH UNILATERAL NEPHRITIS

A REPORT OF TWO CASES CURED BY OPERATION

JOSEPH M. CADWALLADER, A.M., M.D.
AND
ALEXANDER A. BROWN, M.D.
SAN ANTONIO, TEXAS

Perhaps no subject in the whole realm of medicine has attained greater notoriety than that of movable kidney; certainly few, if any, other conditions have had so many symptomatic attributes. Every conceivable ache and pain, every possible dyspeptic complaint has been ascribed to it; and some varieties of insanity even were held by the elastic and racy imagination of the faddist to be consequent upon and entirely owing to movable kidney. Considering the swirl of professional emotion that engulfed the subject, it is small wonder that many surgeons, only a few years ago, were busily engaged in fixing loose kidneys, irrespective of the degree of mobility, or of the possible existence of other sources of the symptoms.

Unlike the Pharisee, I cannot thank God that I am not like other men; on the contrary, I must confess to having administered the fixation chastisement to no fewer than half a dozen kidneys whose only offense was a range of motion greater than what we were pleased to term normal. Of course a cure (?) eventuated in every case: at least every patient involved was so disposed to state. Particularly interesting was the last of this series, a neurotic of the enteroptotic type who, having been informed that one of his kidneys was loose, prevailed on me to suture it in place. So sanguine of success was he, that he rose from his bed at the end of ten days, instead of three weeks, and shortly afterward resumed his customary activities. In the height of his elation he called on me, at which time I took occasion to inspect the field of any former labor; and there, slipping and sliding, in the same old way, was the same kidney in the same old place. Nevertheless, he remained *cured*.

There is, however, an aspect to movable kidney that is of more serious import and therefore demands our most careful consideration. I here make particular reference to unilateral nephritis dependent entirely on the renal mobility. Some urologists assert that nephritis is the rule in movable kidney. This seems improbable unless those who make the assertion refer exclusively to the extreme degree of renal mobility—the so-called floating kidney. While it is not within the purview of this article to discuss the varieties of the condition under consideration, I might in passing state that we may properly recognize four degrees of renal mobility: (1) that in which only the lower pole is perceptible to the touch; this is frequently referred to as palpable kidney: (2) that in which the greater part of the body, but not the upper pole, may be palpated; (3) that in which, besides the findings of the second variety, the upper pole may be distictly outlined, and (4) that in which the entire kidney is palpable and may be freely displaced in the abdomen or in the pelvis—the so-called floating kidney.

The express purpose of this communication is to report two cases of unilateral nephritis in movable kidneys of the second and third degrees, cured by fixation.

REPORT OF CASES

CASE 1.—A man, aged about 29, consulted me because of dull pain in the right loin, radiating to the hypochondrium and downward to the genitals; there were irregular dyspeptic symptoms, headache, and general weakness and debility. He had recently been discharged from the army. The symptoms had been fairly constant for nearly four months, during which time he had lost moderately, but constantly, in weight. He had once been told by a service physician that the urine contained albumin. He further gave a history of occasional pollakiuria.

The patient was somewhat undernourished, and of slender build, but not of enteroptotic configuration. There was, however, a moderate degree of prolapse of the stomach and the hepatic flexure of the colon. The right kidney was easily palpable, the greater portion of the body, but not the upper pole, being readily accessible to touch. The organ had a marked lateral range of motion, slipping easily from the outer boundary of the flank to the midvertebrum. Local tenderness was present precisely in the gallbladder region; it was not, however, augmented by digital pressure upward under the costohepatic margin, nor by direct backward pressure unless the kidney was compressed, in which case exquisite sensitiveness was perceived. The abdomen was otherwise negative and the chest normal. The pulse and temperature showed no variation from the normal. The systolic pressure was 140; the diastolic, 110. Examination of the blood revealed a moderate chlorocellular anemia. There was no history of recent infectious disease, and no tonsillar or oral sepsis. The patient was pale and nervous.

Examination of a twenty-four hour specimen of urine disclosed: total quantity, 23 ounces; specific gravity, 1.024; albumin, a moderate quantity; numerous tube casts, granular, epithelial and hyaline, and an occasional blood cylinder; some leukocytes were present, and numerous red cells.

The patient was placed in bed and supplied with a diet rather liberal in carbohydrates and fats, but adequately restricted in protein; an abundance of water was ordered and taken. Under this regimen, at the end of a week the albumin, which daily examinations had shown to be decreasing, had entirely disappeared; but the casts, although diminished, still persisted. By the lapse of a fortnight the patient, feeling much improved generally, insisted on rising from bed; and several days later he resumed ordinary activity.

In the course of two weeks he reappeared complaining of his former symptoms. The urinary findings were the same as before. One month's rest under the previously described regimen eventuated as in the first instance; after another month of ill-advised activity, the patient again returned; all his symptoms had recurred and were persistent and distressing;

and besides the same abnormal urinary findings, there was an increase in the blood cells and the albumin. Coupling the clinical history with the physical findings, I determined on catheterization of the ureters. The urine thus obtained from the right kidney showed all the pathologic changes noted above; that from the left organ was normal. The phenolsulphonephthalein test was then applied, the solution being injected intravenously (median basilic), and the period of observation covering one hour from the first appearance of color in the tubes. The dye appeared from the left kidney in seven and one-half minutes; from the right, in fourteen minutes. On the left side, 20 per cent. was excreted in the first fifteen minutes, 25 per cent. in the first thirty minutes, and 30 per cent. in the first hour; on the right side the figures were 10, 15 and 20, respectively. A diagnosis of unilateral nephritis was then made.

The patient was again confined to bed and the same dietetic regimen reapplied. At the end of two weeks, a small quantity, more than a trace, of albumin was present, and the casts were comparatively numerous. My proposal, at this juncture, to suture the kidney in place was accepted. The operation involved no noteworthy departure from the usual procedure. Care was taken to make a clean exsection of the retrorenal fatty tissue, and the posterior surface of the organ was freed from its fibrous capsule. The renal pelvis apparently was not at all dilated; but the kidney was swollen, congested and dark.

The postoperative course was comparatively smooth, the patient remaining in bed one month. Examination of the urine at the end of this time revealed a few casts, but no albumin or other abnormal constituents. The patient now assumed light ambulation, resting forenoon and afternoon, for a period of two weeks, gradually increasing the physical exercise. Careful watch was kept on the condition of the urine throughout the entire time; despite the gradually increasing exercise, the casts steadily diminished and the albumin did not reappear. Three months subsequent to operation, the urine showed a twenty-four hour total of 39 ounces, with a specific gravity of 1.020; there were no albumin, no cells and no casts, the last having gradually dwindled out. It is noteworthy that these were the last to disappear. The local pain and discomfort had now entirely subsided, and the patient's general condition had manifestly greatly improved, although he still retained his neurotic tendency, and perhaps always will. He negatived my request for a second series of ureterocatheteric specimens of urine for comparative function test, and resumed the activity of physical labor. When seen a month later, he was in very good health and physical condition, and the urine was normal.

CASE 2.—An unmarried woman, aged 27, of fragile build, had been removed from school when a girl and constrained to perform comparatively heavy work on a farm, her home. She now complained of headache, weakness, palpitation, shortness of breath, gastro-intestinal disturbances, and pain in the back and right side. She was pale, debilitated, and reduced in weight. There was no evidence of focal infection, and no history of infectious disease in the last twelve years. The chest was negative, but the abdomen showed the common form of gastro-enteroptosis. The right kidney was readily palpable and freely movable; and the urine showed all the findings of nephritis. After strong persuasion and some difficulty, ureterocatheteric specimens were obtained, which localized the disease entirely to the right organ; but the extreme irritability of the patient rendered impracticable the prolonged retention of the catheters for separate investigation, by the phenolsulphonephthalein test, of the comparative functional value of the two organs.

I prescribed rest and appropriate feeding; but the principle of rest was repugnant to both parents. However, the young woman's physical disability soon became extreme, compelling her to take to bed. In this, as in the other case, the albumin steadily decreased, and, after a space, disappeared; the casts diminished somewhat, but did not altogether disappear. The general condition improved, and the patient was up and about in less than two weeks, whereupon the albumin promptly reappeared. I again informed the parents (the patient was but a child in self-management) that the girl had an inflamed kidney, and that it could be cured by operation. After mature deliberation, consent was obtained.

The kidney was fixed as in Case 1; but, knowing the patient's domestic circumstances, I insisted on absolute bed rest for six weeks. The urine became normal, and the general condition decidedly improved. Slightly less than three months after operation, the patient was leading a comparatively comfortable life, and performing the ordinary household duties. The urine remained normal.

COMMENT

These two cases seem to me to be rather instructive, serving as they do, to remind us that, while a mere movable kidney may constitute a negligible condition, it may sometimes be the seat of serious organic mischief amenable to proper treatment; that not every neurotic with a movable kidney is to be passed by or treated merely as such; and, above all else, that every patient with a movable kidney and nephritic urine must be subjected to ureteral catheterization, and each renal function and excretion be separately investigated. Chronic bilateral nephritis means Bright's disease, with its grave prognosis; chronic unilateral nephritis, from this particular cause, is curable and, hence, a vitally different matter.

219 Moore Building.

A GAUZE SPONGE FORMING THE NUCLEUS OF A VESICAL CALCULUS *

ALICE F. MAXWELL, M.D.
Instructor in Obstetrics and Gynecology, University of California Medical School
SAN FRANCISCO

The most common mode of entry of foreign bodies into the bladder is through the urethra. There are carefully controlled reports, however, which tend to show that these bodies may occasionally find their way into the bladder in other ways, as secondarily from the digestive tract, through the perineum after its injury, from bony sequestrums after fractured ribs and osteomyelitis, and following pelvic operations. A variety of articles have been found. Some of them have been surgical instruments, as catheters and bougies, which have been broken off or lost in the urethra. Other foreign bodies have been introduced into the urethra for nonsurgical purposes and then lost control of, subsequently finding their way into the bladder. Some of them have been of such remarkable form and shape as to excite speculation as to how they could have passed through the urethra into the bladder, especially in men. The female urethra, being shorter, affords an easier approach. Lead pencils, hairpins, buttonhooks, straw, feathers, paintbrushes, kidney beans, chewing gum, watch chains, leather shoestrings, cord, chalk, cork, glass, etc., have been repeatedly found.

The length of time for which the bladder tolerated these substances has varied within wide limits. Frequently the irritation has been so intense that the patient has been forced to seek immediate relief; other cases have remained without symptoms for many years. Packard [1] reports a case of a hard rubber bar which was introduced through the urethra and which

* From the Woman's Clinic, University of California Hospital.

1. Packard: An Analysis of 221 Cases of Foreign Body Introduced into Male Bladder per Urethram with Report of a Recent Case, Ann. Surg. 25: 568-599, 1897.

remained in the man's bladder for fourteen years. Fleury [2] removed an awl from a man's bladder, which the patient declared had been introduced by a companion fifteen years before. Steinitz [3] records a case in which a rubber catheter was passed spontaneously after dilatation of the urethra. It had been in the bladder for seventeen years.

These objects when removed are more or less covered with incrustations. The nature of the article apparently determines the amount of salt deposit. Smooth articles, like bone, glass or wax, are much less likely to become densely incrusted than the rougher articles, although no substance is immune from vesical incrustation.

There are many cases of foreign bodies which are stated to have ulcerated through neighboring viscera into the bladder. Freeman [4] removed by cystotomy an incrusted darning needle from the bladder of a child of 4 years. The mother had seen her swallow the needle eighteen months previously. Harrison [5] removed a calculus from a sailor's bladder. The nucleus of the stone was a whalebone mouthpiece of a pipe which the man insisted that he had swallowed many years previously. Roberts,[6] through a perineal incision, removed a slate pencil from a man's bladder which he stated had been swallowed six months before in the presence of reputable witnesses.

Injuries to the perineum with subsequent ulceration into the bladder have been reported by several authors. Otis [7] records a case in which the nucleus of the stone was a piece of cloth which had formed part of the man's trousers when he had sustained a serious injury to his perineum some time before the operation. Ghose [8] extracted from the bladder of a boy of 5 years a piece of wood that had been forced through the perineum by a fall one year previously.

Judd,[9] in reviewing the foreign bodies in the bladder in the cases of the Mayo Clinic, reports two unusual cases in which he believes that the articles were so large that they could not have entered the bladder through the urethra. A boy of eighteen, with a tuberculous osteomyelitis of the femur, had passed fragments of bone with the urine. Five years after the onset of bladder symptoms, a piece of the sequestrum was removed from the viscus. There were no scars of the bladder wall at the time of operation which would indicate the point of entry. In the second instance, a knife blade formed the core of a large bladder calculus. The man stated that an open jackknife had penetrated into his left hip twelve years before and had been broken off so that it could not be found. He was sick in bed three weeks thereafter. Symptoms were present twenty-one months before the operation. Packard removed an inch of rib bone from the membranous portion of the urethra of a man who several years previously had had several fractured ribs. The groove on the under surface of the bone identified its origin.

La Roque [10] reported a case in which a gauze sponge was left in a pelvis after hysterectomy. The woman was free from any vesical symptoms for five years; then apparently without any cause there was a sudden onset of severe tenesmus and suppuration of the bladder with a subsequent explusion of a gauze sponge.

The case here reported is of interest in this connection.

REPORT OF CASE

E. N., a woman, aged 45, married, whose family and past histories were negative, and who had had ten children, entered the Woman's Clinic of the University of California Hospital one year after a left inguinal herniotomy and a cervical repair had been performed by a reputable surgeon in another hospital, following which a train of vesical symptoms gradually developed. At the time of admission she complained of frequent painful urination, vesical tenesmus and passage of stringy, whitish material.

There was a tender cystic pelvic mass the size of a small orange, most of which was to the left of the mesial pelvic line. This mass was later proved to be the markedly contracted and indurated bladder. The uterus was upright and large, in close approximation on the posterior bladder wall. A glass catheter struck a hard mass which gave a definite clinking sound. The cystoscope revealed a markedly injected urethra, a hyperemic bladder presenting many ulcerating areas, and a large grayish stone which nearly filled the contracted bladder. A large vesicovaginal fistula was made and the stone was removed in fragments, since it was found too large to be removed without crushing. It proved to be a surgical gauze sponge infiltrated with salty deposits. The entire mass was judged to be 8 cm. in its longest pole.

The patient's symptoms cleared immediately after operation, and she was discharged three weeks later with urine still cloudy with pus. Three months later the bladder wall appeared normal and the vesicovaginal fistula was closed without difficulty. Subsequently the bladder was treated with boric irrigations to dilate it to normal size. The patient is now well and free from any bladder symptoms, one and a half years after the closure of the fistula.

COMMENT

We are unable to determine how this gauze obtained entry into the bladder. The urethra in our hands admitted a No. 12 Kelly cystoscope with difficulty. It seems impossible that the large amount of gauze concerned in the concretion could have been forced through this channel into the bladder by the patient. Nor could the sponge have ulcerated through the vagina into the bladder. More likely a diverticulum or corner of the bladder was intimately connected with the hernia and was opened at the time of operation without its true character being recognized, and in some manner the gauze found entry into the viscus, which in turn was closed off as part of the hernial sac. While this is but theory, it appears as if it were the most likely of the three possibilities which merit consideration.

In this connection it is worthy of comment that foreign bodies which appear to have entered the bladder other than through the urethra have been able to effect entrance without causing leaking of urine or subsequent scar formation in the bladder. The foreign bodies that so enter must be completely walled off, or extravasation would occur. The bladder, in turn, must close as quickly as the body enters.

It is of interest that foreign bodies are but rarely expelled spontaneously from the bladder. Only fourteen of Packard's 221 collected cases were delivered in this manner. Removal is usually effected by crushing or after cystotomy. Van Meter [11] and Weisz [12] were able to dissolve wax bougies in the bladder by instilling benzin.

2. Fleury: Bull. de la Soc. chir. de Paris **4**: 39, 1878.
3. Steinitz: Breslau Aerzt. Ztschr. **1**: 24, 1879.
4. Freeman: Lancet **1**: 340, 1885.
5. Harrison: Lancet **1**: 287, 1885.
6. Roberts: Med. Times & Gaz., London **40**: 113, 1859.
7. Otis: Med. Gaz., New York **7**: 181, 1880.
8. Ghose: Indian Med. Rec. **5**: 387, 1893.
9. Judd: Journal-Lancet **35**: 421, 1916.
10. La Roque, G. P.: Surg., Gynec. & Obst. **28**: 522 (May) 1919.
11. Van Meter, S. D.: Removal of Paraffin from the Bladder, J. A. M. A. **58**: 478 (Feb. 17) 1912.
12. Weisz: Am. J. Urol., December, 1909.

GRADUAL REDUCTION OF FRACTURES OF THE MAXILLA AND MANDIBLE *

A. L. MILLER, D.D.S.
Lieutenant-Colonel, Dental Corps, U. S. Army
FORT MC HENRY, MD.

In the gradual reducton of fractures of the maxilla and mandible, we are dealing with cases in which union is well under way in malopposed bones, or we are endeavoring to establish a bony union when there has been a loss of substance, and attempting to influence a growth of bone in its place by use of tension following the formation of a callus. In these the osteogenic processes are the same as those attending bone injuries in any other part of the body, the bone repair being dependent on the osteoblasts, and the bone resorption depending on the osteoclasts. Both processes are vitally active at all times in this class of work,

Fig. 1 (Case 1).—Malocclusion following bone graft due to miscalculation of bite in splinting. Patient unable to close mouth.

for much of the newly formed bone is again absorbed in yielding to the pressure brought to bear in an effort to correct the malposition of the bones or the malocclusion of the teeth resulting from jaw fractures.

When a case of fracture reduction is undertaken, it is most important that the exact condition of the areas involved be definitely ascertained. This applies to all cases, but more especially to those in which this method of reduction is employed, as will be explained later.

Roentgenograms should be taken in order to demonstrate the absence of teeth or foreign matter in the line of fracture or the areas involved, and the nonexistence of sequestrums or infection. The presence of any of the foregoing will at least threaten the results, if not spell complete failure.

In cases in which there has been a loss of substance, the clearing away of all foreign matter, roots, etc., and the freshening up of the fragmented ends of the bone followed by their approximation and immobilization by splints are the first and most important steps toward influencing bone formation for supplementing the lost parts. The reduction of the fracture to its

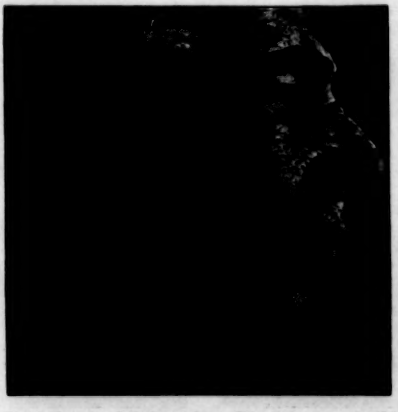


Fig. 2 (Case 1).—Self-adjusted jaws. This change was accomplished while a splint was being made for its correction. The inclined plane of the teeth exerted a sufficient amount of influence to effect the correction, showing how slight an amount of force is necessary to bring about a result if taken at the proper time.

proper position should not be begun until roentgenoscopy reveals a good callus with a fair deposit of lime salts. The tension at first should be very mild until it is learned just how rapidly the parts respond to the force applied. After the parts have been under ten-

Fig. 3 (Case 2).—Fracture of superior maxillary with extensive loss of bony substance. Note retraction of superior maxilla.

sion for a few days, the force should be entirely relaxed and the parts allowed to rest; this will give Nature a chance to throw down a heavier deposit of lime salts, and allow the irritation created by the applied force to subside. As soon as it is found just

* Read before the Section on Stomatology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

what amount of force is required to conduct the case in an easy and gradual manner, the force should be kept up steadily for several days at a time and relaxed completely for a few days. This, as stated before, rests the parts and allows a heavier deposition of the lime salts. Great care should be exercised in not forcing the parts too rapidly, for such action would cause an inflammatory process and a consequent breaking down of the bony substance thus far formed, resulting in a fibrous union, while a movement to a moderate degree causes a mild irritation and a stimulation of bone deposit. Many bone grafts have been avoided and excellent results obtained by the foregoing process, following the early approximation of the fragmented ends of fractured bones.

Fig. 4 (Case 2). — Roentgenogram revealing loss of bony substance of palate and nasal bones, also retraction of superior maxilla. Note malocclusion of teeth.

Fig. 5 (Case 2).—Regeneration of bony tissue and occlusion of teeth after reduction of fracture.

The thorough cleansing of the area of all roots and infectious materials is imperative, for as soon as tension or force is applied, the irritation thus created offers an excellent opportunity for any latent infection to present itself; however, when a "flare up" of this nature occurs, the infection is usually traceable to either a root or a small sequestrum of bone, and its removal will stop all process of suppuration and the tissues rapidly return to normal. The force must be entirely relaxed during such an occurrence, and all work must cease until the tissues have regained their normal condition.

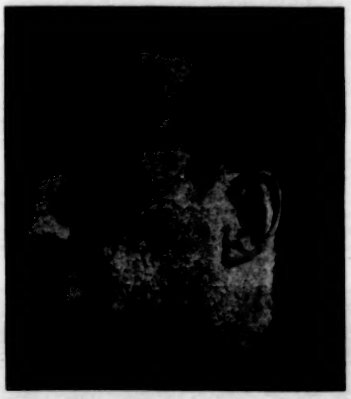


Fig. 6 (Case 2).—Appearance of patient at end of treatment.

The supplementing of lost bony tissue by this method has its limitations; extensive losses cannot be supplanted, excepting by the process of bone-grafting, although one case in which a loss of 1¼ inches was accomplished by the near approximation of the fragmented ends, followed by tension after the roentgen ray, showed good callus formation.

Fig. 7 (Case 3). — Compound, comminuted fracture of superior maxilla with extensive loss of bony tissue. Note retraction of superior maxilla and sunken condition of nasal bones and orbits.

Fig. 8 (Case 3).—Appliance in position after six weeks' treatment.

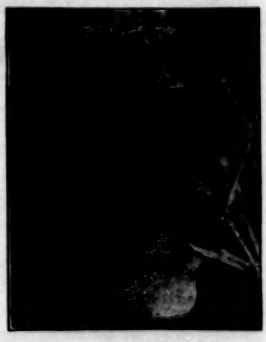


Fig. 9 (Case 3).—After two and one-half months' treatment. Note elevated condition of nasal bones and orbits.

When a delayed union exists, there is always a cause for it, either septic involvement, due to roots, foreign matter or sequestrums, or possibly to the lowered vitality of the fragmented ends of the bone,

in which case any such matter, including fibrous tissue, should be removed, the fragmented ends of the bone freshened up and approximated, and the splints properly adjusted preparatory to applying tension following callus formation.

The means employed in conducting these cases is either interdental, intermaxillary or the combination of both, depending on the nature of the case. Very often an appliance can be used singly, on either the upper or the lower jaw, provided there is a sufficient number of teeth present to support the appliance and to withstand the necessary force required to accomplish the desired result. On the other hand, when the anchorage for the appliance furnished by all available teeth of the one jaw is insufficient to withstand the stress to be applied, it is necessary to utilize a splint anchoring from the opposite jaw in conjunction therewith.

The question of firm anchorage is one worthy of serious thought; for if the bony union is in a well advanced stage, and the case is one presenting a lone tooth as the only support for anchorage to the one fragment, the tooth will be the one to alter its position instead of the bone in malposition; therefore it is necessary to obtain an anchorage that is firmer than the bony union of the fracture.

ORCHITIS FROM MUMPS

THE NEED OF CONSERVING THE TESTES BY INCISION OF THE TUNICA ALBUGINEA*

EDGAR G. BALLENGER, M.D.
AND
OMAR F. ELDER, M.D.
ATLANTA, GA.

Can we lessen the number of testes now being atrophied each year by orchitis from mumps? We think we can, though our opinion is based on a consideration of the pathologic condition present and on the method employed, rather than on a sufficient number of cases to prove our opinion. We have had only a limited number of patients with orchitis from mumps because these patients are nearly always seen by the general practitioner instead of the genitourinary specialist; and while we have had the opportunity of treating only three patients by the method we recommend, the results in these were so satisfactory and so nearly in accord with what might logically be expected that we desire to direct attention to the probability of similar results being obtained in other cases.

That the present method of treating orchitis caused by mumps is inadequate is shown by the large number of atrophied testes observed in our daily routine examinations. The patient explains that he had mumps and they went down on him, and that when he recovered, the testicle gradually grew smaller.

This destruction is probably caused by two things: (1) the local toxic product of the mumps organism; (2) the pressure necrosis due to the inelastic tunica albuginea's preventing the testicular substance from swelling in response to the inflammation present.

In mumps, the parotid and salivary glands contain an exudate that is mainly serous and rarely suppurates. The same thing is probably true of orchitis from mumps.

In the present discussion we will not consider orchitis caused by other affections than mumps, for rarely does atrophy follow orchitis from traumatism, gonorrhea, malaria, scarlet fever, typhoid fever, influenza, rheumatism, gout, etc., unless it proceeds to suppuration, which is unusual.

Orchitis follows mumps in from 10 to 25 per cent. of the cases, and in about one half of these atrophy results. This percentage is sufficiently high to suggest a reconsideration of our treatment to determine whether another plan would not secure a smaller number of atrophies. The psychic and physiologic effects on the patient, especially when both testes are atrophied, are considerable and produce much unhappiness and dissatisfaction.

Lines for incisions of tunica albuginea for orchitis from mumps. Dotted lines are for optional incisions if it is thought necessary to relieve tension.

That it would be desirable to prevent the atrophy will doubtless be granted. Assuming, then, that in about half of the patients with orchitis from mumps atrophy will result, what are we to do to prevent this occurrence? A consideration of the pathologic process has led us to the conclusion that the rational plan to follow is to incise the tunica albuginea and relieve the pressure, and at the same time allow the escape of some of the toxic substances produced by the organisms which cause mumps. This, of course, must

* Read before the Section on Urology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

be done early in the disease before the necrotic process has become established, just as in strangulated hernia the operation should be performed early if resection of the intestine is to be obviated.

Several factors would tend to prevent the prompt incision of the tunica in mumps:

1. The mildness of the symptoms and the small amount of swelling of the testes lead the patient, his family and his physician to regard the palliative measure as being sufficient.

2. The contagiousness of the disease requires more care than in an ordinary operation.

In answer to the first objection, we may reasonably assume that some of the patients will decide on an incision of the tunica albuginea if they are informed that without an operation there will be about a 50 per cent. chance of atrophy of the testicle, while with a slight operation, there may be a good chance of preventing this undesirable occurrence.

As regards the contagiousness of the disease, we say that with a little care it is easy to secure sufficiently adequate isolation in the average hospital to prevent the spreading of the contagion to other patients. The operating room should be carefully cleansed after the operation, with about the same precautionary measures that would be used after an ordinary streptococcic infection.

TECHNIC

The patient should be anesthetized, preferably with gas-oxygen. The scrotum, which has been previously thoroughly cleansed, is painted with a weak solution of iodin. An incision is made in the anterior surface of the scrotum through the tunica vaginalis, and the testis is delivered. An H-shaped incision then is made in the tunica albuginea. The testicular pressure causes the swollen, reddened substance to protrude somewhat through the incised tunica. If the swelling is extensive, other slits may be made, wherever indicated, to relieve pressure. The testicle is wrapped for a few minutes in a towel wet with a hot saline solution, and then replaced in the tunica vaginalis; a small Penrose cover is inserted, and the incision closed layer by layer with interrupted sutures. A 25 per cent. ichthyol dressing is applied and held in place by an ordinary suspensory.

Three testes so operated on are now normal, two after three years and one after twenty months.

We hope by this suggestion to enlist the interest of others to try this method, as we do not see a sufficient number of patients with mumps to obtain a large enough series to prove with certainty the value of the method suggested.

ABSTRACT OF DISCUSSION

DR. VICTOR D. LESPINASSE, Chicago: The destruction of testicular tissue by mumps is enormous in the aggregate. Dr. Ballenger was courageous in incising the tunica vaginalis. The thought has been that in incising the testicle, the testicular parenchyma would ooze out through the opening and all that would be left would be the empty tunica vaginalis. It seems to me that multiple incisions should be made, and long rather than short. I have had two instances where the testicle following its involvement during mumps was studied in relation to its spermatogenic function. In one case, a rather severe type of orchitis, the man remained free from spermatozoa for eight months; in the course of another eight months spermatozoa were present in normal numbers. It has been stated that mumps is a pure testicular disease, while gonorrhea attacks the epididymis and the testicle only secondarily. But mumps does attack the epididymis alone and runs a course exactly similar to a moderate gonorrheal infection.

DR. E. G. BALLENGER, Atlanta, Ga.: I used an H-shaped incision; additional slits are made if needed to relieve tension. No very long cut is made and yet this holds the testicular tissue within control. Multiple short incisions would probably do just as well. It is true that in the ordinary inflammatory condition the testicular tissue will come out in long threads, but orchitis from mumps is not a pyogenic inflammation. The swelling is caused by a serous exudate. The only pathologic study I could find was that of the parotid glands, and it is probably a similar condition in the testicle. One point for the operator to consider is whether he has ever had mumps. I contracted it from the first patient operated on. The utmost care was taken not to develop an orchitis and luckily I escaped.

RATE OF ABSORPTION OF DIGITALIS FROM GASTRO-INTESTINAL TRACT

A CLINICAL STUDY *

HAROLD E. B. PARDEE, M.D.
Assistant Attending Physician, New York Hospital; Instructor in Medicine, Cornell University Medical School
NEW YORK

The problem of digitalis medication is steadily emerging from the condition of uncertainty and imperfect knowledge by which it has been surrounded. The idea that the variable results which were obtained with different patients were due to a variability in the drug itself has been shown to be largely false. The variable activity depended much more often on whether the patient's heart failure was due to the rapid rate of auricular fibrillation, or to the mechanical handicap of a valvular lesion or a weak ventricular muscle, and on whether or not the physician gave what we have come to know is an adequate therapeutic dose of the digitalis.

The great success which attended the use of 2 dram or 3 dram doses of the infusion, as compared with 5 minim or 10 minim doses of the tincture, can be readily understood, for the amount of digitalis in 1 dram of the infusion is the same as is found in 8.7 minims of the tincture. Those who used the infusion gave more digitalis; and yet, at the time when half ounce doses of the infusion were sanctioned by common usage, a suggestion of 30 minim doses of the tincture was met with apprehension. It is not denied that there are digitalis preparations of very low potency, but preparations of this sort are not common, and the failures due to them are far fewer than the failures due to improper administration, or to the heart's being severely handicapped by disease.

The use of these small doses also gave rise to a belief that digitalis is slowly absorbed, taking three or four or more days to produce its effect, and some of the failures have been wrongly ascribed to the special inability of the patient to absorb the drug. Here, again, the infusion achieved a reputation for superior absorbability, owing to the relatively larger amount of digitalis leaf represented in the commonly accepted dose.

When it was pointed out by Cohn, Fraser and Jamieson [1] that digitalis produced a definite change in the form of the T wave of the electrocardiogram, it seemed that we had here a definite index of digitalis action on the ventricular muscle. These authors gave 1 gm. doses at four hour intervals and noted the first change in from twelve to twenty-four hours. By giving rather

* Read before the Section on Medicine, New York Academy of Medicine, Dec. 16, 1919.

1. Cohn, Fraser and Jamieson: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, J. Exper. Med. 21: 593, 1915.

large doses of digitalis to a series of patients, and taking a control and frequent subsequent electrocardiographic records, it seemed that it should be possible to decide how quickly the drug is absorbed and begins to exert its effect on the muscle of the ventricles. By counting the heart rate shown in the records it was also possible to decide how quickly the drug begins to exert its effect on the vagus center causing the heart to slow.

DETAILS OF THE EXPERIMENTS

The dosage that was used in these experiments was approximately 1 minim of the tincture given by mouth, well diluted, for each pound of the patient's weight. This dosage was selected because I believe that it is the maximum single initial dose of the tincture that can be safely prescribed by a physician who is dealing with a commercial tincture whose potency he does not know. Seven patients were tested in 1917, and the tincture used at that time had a potency of 125 c.c. per cat unit.[2] On continuing the work two years later the old tincture was not available, and the one used for the last two patients was found to have a potency of 0.65 c.c. per cat unit.[2] The dose of 1 minim per pound for these two patients is therefore almost twice as powerful as the first group, and proves the need for caution with tinctures of unknown potency.

Patients with normal cardiac rhythm were selected, because of the difficulty in measuring slight changes in the T wave when the waves of auricular fibrillation are present. Patients were selected who did not show cardiac failure, in order to avoid the possibility of a variable absorption due to a congested intestinal tract. Eight of the patients selected were free from cardiac valvular disease, in order to show that the digitalis effect is exerted on healthy as well as on diseased hearts. One patient with valvular disease was included (Case 8), and one with chronic interstitial nephritis and auricular fibrillation (Case 7).

Figure 1 is shown as an example of the sort of change which the T wave underwent during these experiments. There is a diminution in its height, or a sinking of the level before the T, which constitutes the early stage of a change which later results in an inversion of the T in one or more of the leads in which it was originally upward. A diminution in height may appear after as little as 30 minims of the tincture given in one dose by mouth. It is impossible to say that it appears immediately on the entrance of the drug into the blood stream, but it is at least a very early result of the drug's action on the heart muscle. In order to make the waves larger and thereby increase the size of any variations which might occur, the galvanometer was standardized so that 1 millivolt caused a deflection in the record of 15 mm. instead of the usual 10 mm. Even with the string at this degree of slackness, the deflection time was less that 0.2 second, so that the waves are in no way deformed.

2. Reported by Dr. R. A. Hatcher, through whose kindness these tinctures were assayed.

Figure 1 gives the records of two patients, showing in each case the control record and the record taken after three, six, seven, eleven and twenty-four hours. The figure for the height of the T wave which appears in the corner of each lead is not a measurement of the height of the wave of the figure but is an average of several T waves from this record. Case 6 shows a sinking of the level before T in Lead 3, while Case 5 shows merely a decrease in the height of T.

PROMPT APPEARANCE OF EFFECT ON MUSCLE AND ON RATE

The results of these experiments can be seen in Figures 2 and 3, the former showing the effect on the T wave and the latter the effect on rate. Figure 2 gives the weight of each patient and the dosage of tincture of digitalis. The vertical lines are time lines and refer to the number of hours elapsing after the dose was given. The appearance of an x on the line opposite the patient indicates that a record was taken at the time indicated by the relation of this x to the time lines. If a horizontal line is drawn to the right from this x, it indicates the beginning of the effect on the T wave, or if the effect has begun previously it indicates an increase in the change. When the line is dashed and not solid, it indicates a very slight effect which could not have been considered definite unless the next record had shown it increased. Sometimes the T wave would vary irregularly in one lead (Fig. 1, Case 6, Lead 1), while in another lead it would show

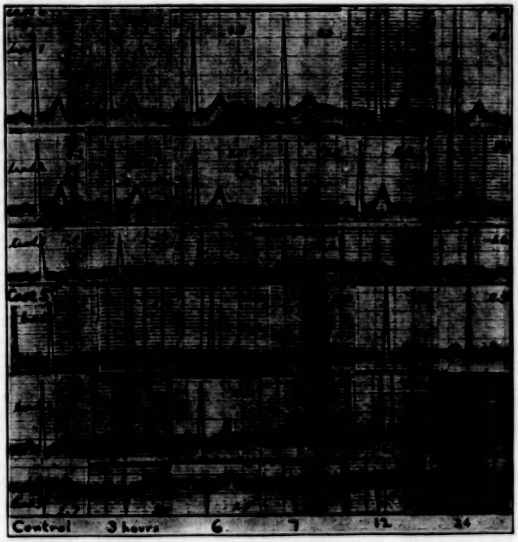


Fig. 1.—Records of two patients taken by Leads 1, 2 and 3. From left to right the first vertical column is the control of each case, the second is after three hours, the third after six hours, the fourth after seven hours, the fifth after twelve and the last after twenty four hours. The figures on each lead are the average height in millimeters of the T wave in that lead as computed from the measurement of several different waves. The paired vertical lines are made by the time marker; the space between the corresponding line of each pair is 0.2 second. Both patients show the first effect in the three hour record.

a steady and increasing diminution in size, or perhaps the lead which eventually showed a steady diminution would vary irregularly a few tenths of a millimeter at first. The reaction was considered to start only when the T wave in the lead which was eventually to show the marked change had ceased to show irregular variations and was definitely started on its decrease in height, more than 0.3 mm. being considered definite.

It is plain from an examination of Figure 2 that the *first effect* on the heart muscle as shown by this change in the T wave appeared in three of the patients by the end of two hours after the administration of the digitalis, and in seven patients by the end of three hours, while all but one showed it by the end of four hours. This patient was exceptionally slow to develop the change in the T wave, still showing an increase as late as after twelve hours, while all of the other patients had developed the maximum change by twelve hours and usually earlier. Six patients developed the *maximum change* by the sixth or seventh hour after the administration and two reached it between seven and twelve hours, while only the one mentioned developed it after twelve hours.

The fact that a definite effect appears in most of the patients at the third hour is of great interest as

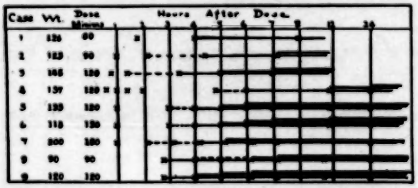


Fig. 2.—Time of onset of the action on heart muscle as shown by the T wave. The weight of each patient and the dose of tincture of digitalis are shown. The vertical lines represent hours after the administration of the dose, and the *x* marks show the time of each record by their relation to the time lines. A dotted line drawn to the right from an *x* shows that the record taken at this time showed a very slight change in the T wave, while a solid line indicates a definitely marked change in the record at which it begins, or an increase in the change, if such is already present.

showing that the drug is fairly quickly absorbed, and that its action begins at a time much sooner than has been believed. It is even possible that an effect might have been noted more frequently at the second hour if more records had been taken at that interval. This is especially likely in Cases 8 and 9, which showed a very definite change in the first record after the administration taken at an interval of only two and three-quarters hours.

After the effect appears it increases slowly and usually reaches its maximum for this dosage at about six or seven hours after the administration, maintaining this maximum for a period of twenty-four hours. The change then decreased steadily in the two cases that were followed for three days and for ten days after administration, and increased in all of the five cases that were continued on further doses of digitalis at the end of the twenty-four hour period of observation. The change became much more marked as the patient approached the point of full therapeutic action of digitalis. This is considered to support the former statement that the changes which appeared during this experiment represent only a slight digitalis effect, as is also the fact that Cases 1 and 2, in which the patients received smaller proportional doses than the others, still showed the effect on the T wave, and the effect in these two cases appeared at about the same time after the administration as in the other cases, in which more digitalis was given. Variation in the size of the dose within these limits does not appear to have a marked influence on the time of onset of the digitalis action.

It is plain that there are the usual variations in individual reaction which are so evident in work with digitalis. Case 4 is an especially marked variant, showing only the slightest effect after four and three-quarters hours, the definite effect at six hours and the maximum effect after twelve hours. This patient was not slow to absorb the drug, because reference to Figure 3 will show that there was a slowing of the rate after one and one-half hours and a very definite slowing after two hours, which is considered to indicate that the drug had been absorbed at this time.

Figure 3 shows the changes in the heart rate at each period after the digitalis. It gives the rate as counted over a period of twenty seconds in the control record, and the rates in the later records which were taken at a time indicated by the relation of the figures to the time lines, which are here horizontal instead of vertical. The rate considered to be the first to show slowing of the heart by digitalis is printed in boldface type. Irregular variations in rate are seen in the early records of some patients, but definite slowing was not accepted until these had given place to a rate constantly slower than that of the control.

The rate change appears before the change in the T wave in three of the patients, at the same time in four, and later in two of them. The average time of appearance of the first definite slowing is slightly less than for the T wave effect, though the difference is almost negligible. Evidently it occurs independently of the change in T, and this is not surprising for the one is due to vagus activity influencing the sinus node when normal rhythm is present, and the auriculoventricular node in the presence of auricular fibrillation, while the change in the T wave is more probably a sympathetic nerve effect or a direct effect on the muscle. The actual amount of the change in rate averages close to 10 beats per minute in the cases with normal rhythm, but was 50 beats per minute in the case with auricular fibrillation (Case 7). In Case 2 the patient had a sarcoma of the sacrum, and his somewhat weakened condition was the cause of the rapid rate. It is noteworthy that this rapid rate was slowed very slightly, as contrasted with the more marked slowing shown by the hearts which were not subjected to any abnormal influence.

The slowing that these patients showed after the digitalis is quite plainly more irregular than the change in the T wave, which appears as a minimum and increases quite regularly to a maximum, which is maintained. The heart rate is well known to be constantly varying in response to varying impulses from the vagi and the sympathetics; and from the few observations of this series, it seems that the digitalis effect on the vagus center begins to wear off by twenty-four hours after the drug is given, and that even during its action the rate may be varied by other factors.

SUMMARY OF RESULTS

The action on the heart muscle, as shown by the change in the T wave, begins between two and four hours after a dose of 1 minim of the tincture for each pound of weight, and reaches its maximum at about

the sixth or seventh hour. This effect continues for a period of twenty-four hours without change that is apparent. It seems likely that this represents the rate of absorption of the drug, or at least that it does not lag far behind it, for both rate changes and T wave changes appear and reach a maximum practically together. Somewhat smaller doses are absorbed at the same rate, and this is probably true of doses that are just sufficient to produce this change in the T wave and also of doses that are maximal.

The effect on the heart rate of patients with normal sinus rhythm seems to begin on the average slightly before the effect on the muscle, but is not constant in this. When the rate is between 60 and 80 to start with, the slowing is appreciable, and seems to reach its maximum at about the same time as does the muscle effect, i. e., after six or seven hours. With rapid rates the slowing is very marked in the one case of auricular fibrillation investigated, while in the case with normal rhythm the rate is scarcely affected. These two cases fall in with the commonly accepted conception of the effect of digitalis on rapid heart rates, that those which are due to auricular fibrillation are promptly slowed while those which have an accelerated sinus rhythm are but little affected. The amount of slowing shown by the cases with slow regular rhythm varies from 7 to 16 beats per minute, and is much more than it was anticipated to find. It appears that the heart which is not accelerated by abnormal influences is more susceptible to the vagus effect on rate.

APPLICATION TO THERAPEUTIC USE OF DIGITALIS

It seems evident from these facts that, when given by mouth, digitalis is absorbed rapidly enough to affect both heart rate and heart muscle in from two to four hours in different patients, and that the effect increases to a maximum at six or seven hours, which is maintained at least approximately for twenty-four hours.

In giving digitalis to patients with symptoms of heart failure, we should not expect much slowing even from quite adequate doses, unless auricular fibrillation is present. That we shall obtain prompt and marked slowing in cases with auricular fibrillation is suggested by the result with our single case, and very amply demonstrated by the results obtained by Robinson [3] in a series of twenty-six cases with fibrillation, in which, however, he gave doses which were for the most part twice as large as those used in this series. His first effects on rate were obtained in from two to five hours without exception, and the maximum effect appeared in from six to nine hours in some cases, though in most it came between fifteen and sixteen hours. The present series is too small and the rate variations are too slight to allow me to indicate a time for maximum slowing; but in general these cases agree with Robinson's findings, and in particular the one case of auricular fibrillation, Case 7.

In patients who are not suffering from heart failure, the variations in the rate of absorption are not great, and it may be surmised that this is also true of patients who are suffering from heart failure because of the agreement of these figures with those which Robinson obtained, using for the most part patients with severely failing hearts.

Patients who receive a single dose of digitalis by mouth will be subject to its influence first at the third or fourth hour and strongest at the seventh hour, whatever may be the size of the dose. If the dose is small there may be no evidence of its action; while, if it is sufficiently large, clinical improvement may follow shortly after the time of maximum effect. This has, in fact, been repeatedly noted when doses of proper size have been given.[4]

For reasons which have been given in detail elsewhere [5] but which are based on the variable strength of different tinctures and the variable susceptibility of different patients to the drug, it is recommended that a single dose of 1 minim of the tincture per pound of body weight should never be exceeded when a tincture of unknown potency is being employed. It is believed, though, that this dosage is always safe to use, because a very large number of patients have been reported to have received double this dose of a tincture of average

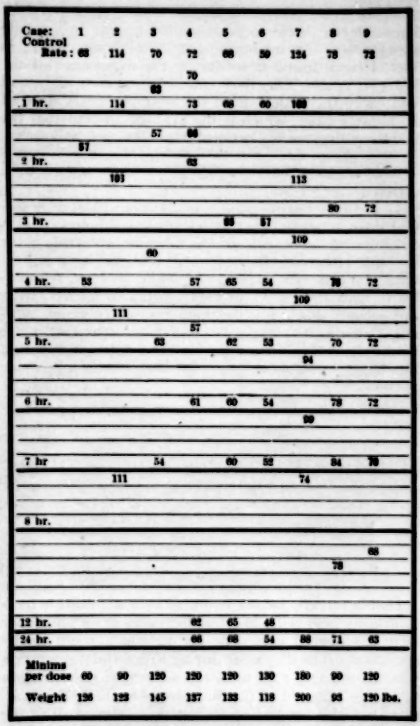


Fig. 3.—The heart rate after digitalis. This is the same series of patients, and the weights and doses are shown below. The horizontal lines represent hours after the administration. The figures are the number of beats per minute, and the first one to show definite slowing is in boldface. In Case 7, the patient had auricular fibrillation; all the others had normal rhythm.

3. Robinson, G. C.: The Rapidity and Persistence of the Action of Digitalis on Hearts Showing Auricular Fibrillation, Am. J. M. Sc. 159:121 (Jan.) 1920.

4. Robinson, G. C. (Footnote 3). White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, Arch. Int. Med. 21:740 (June) 1918. Eggleston, Cary: Digitalis Dosage, ibid. 16:1 (July) 1915.

5. Pardee, H. E. B.: Principles of the New Method of Administering Digitalis, New York M. J. 110:1064 (Dec. 27) 1919.

strength, i. e., 1 c.c. per cat unit, without any unpleasant or dangerous results having been observed.[6] The administration of single doses equivalent to 1 minim per pound is inadvisable except in the presence of urgent heart failure, when the patient is in bed and when prompt results are demanded. It should never be attempted under any circumstances if the patient has received any preparation of digitalis or its allies within a period of two weeks.

It seems plain that when we are desirous of maintaining a continuous effect from digitalis, it is unnecessary to give it at less than six hour intervals, for the maximum effect of any one dose will not be reached until six hours after its administration. A twenty-four hour interval between doses would appear to be quite satisfactory for maintaining a continuous effect; in fact, I have found it so during the experience of the last two years. One dose can be given each night and will carry the patient until the next night. A dose of 20 minims daily, which is the average amount that the body can dispose of in twenty-four hours,[6] will suffice in the great majority of patients to maintain the desired digitalis effect which has been produced by a series of larger doses.

It is furthermore plainly inadvisable to give a second dose at an interval of less than six hours after a large initial dose such as has been recommended, for the full effect of the first dose will not be manifest until this time has elapsed. It would be more reasonable to wait for twelve or eighteen hours before giving the second dose, for by that time early toxic signs might make their appearance and warn us that more of the drug would have no further beneficial effect on the heart, and would only produce the undesirable phenomena of poisoning.

74 West Forty-Eighth Street.

DIAPHRAGMATIC HERNIA DIAGNOSED DURING LIFE *

MILTON M. PORTIS, M.D.
AND
SIDNEY A. PORTIS, M.D.
CHICAGO

Diaphragmatic hernia is not so rare a condition as is commonly believed. Most of the cases in the literature were discovered either in the necropsy room or by operation. The diagnosis during life without operation was exceedingly rare until the advent of the roentgen ray. With the aid of the fluoroscope in the last decade, cases have been reported frequently. Almost all of the roentgenologists of broad experience have reported one or more cases. The condition is encountered more frequently now as a result of war injuries.

Hernia of the diaphragm, as hernia elsewhere, may be of congenital or acquired origin. A distinction should be made between true and false hernia. The true hernia has a distinct sac, consisting of a layer of peritoneum inside and a pleural layer outside. Most of the cases of traumatic hernia, due to crushing injuries or stab or gunshot wounds, are of the false variety. The hernia may occur through the three larger preformed natural openings of the diaphragm which permit the esophagus, aorta and vena cava to pass, or the smaller ones for the passage of the azygos veins and splanchnic nerves. Besides, it may occur in congenitally weak areas of the diaphragm, like the foramen of Morgagni, which lies on each side at the costosternal portion, or it may occur in the posterior portion, in the space between the costal and lumbar portions of the diaphragm. Gossnitz [1] has shown by studies in comparative anatomy that this area is the last to be closed, and that defects invariably occur in this region.

DIFFERENTIAL DIAGNOSIS ACCORDING TO ROENTGENOLOGIC FINDINGS

Eventration	Hernia
High dome of the diaphragm with no loss of contour	High diaphragm with loss of contour, a portion being regular, a portion being blurred
No gas shadows above liver shadow	Gas or barium shadow seen above liver shadow
	Gastric deformity
More likely to be congenital	Obstruction
Paradoxical movement of the diaphragm	Presence of gas or fluid or both in the hernial sac.

Various abdominal viscera are found in the hernia, but the stomach and colon are by far the most common. The left side is the one most often involved, probably because the liver protects the diaphragm on the right side. According to Vogel,[2] the left side is involved fifteen times as often as the right. The size is variable, from some so small that they can hardly be demonstrated, to others so large that almost the entire diaphragm is involved.

SYMPTOMS

There are no pathognomonic symptoms. Many cases give no symptoms at all. Especially is this true in those of congenital origin. The complaints are variable and arise either in the abdomen or in the chest, depending on the amount of interference with the function of the various organs involved in or near the hernia. The displacement of the thoracic organs by the hernia and the constriction of the hernial ring on the contents of the sac, as well as the effect of adhesions both inside and outside the sac, all serve to modify the clinical picture.

In some cases embarrassed respiratory action causes dyspnea and cyanosis. In others, cardiac displacement may cause palpitation and mediastinal discomfort and dizziness. Gurgling and rumbling sounds may be heard in the affected region.

Gastro-intestinal symptoms are not constant. Dyspepsia, belching, nausea and even vomiting may occur. Hematemesis has also been reported. Pain in the upper abdomen is frequent, and it may be felt in the chest on the affected side. The pain is usually increased by respiration. At times there may be colicky pains, with the clinical picture of subacute or acute intestinal obstruction.

Constipation is frequent, and strong cathartics may be necessary for free evacuation. Our case presents the clinical picture found in Hirschsprung's disease. The toxic picture, during the constipated stage with the accumulation of feces in the colon, was relieved by forced evacuations from time to time of large amounts of fecal material.

6. Pardee, H. E. B.: Notes on Digitalis Medication, I, The Rate of Disappearance of Digitalis from the Body, J. A. M. A. 73: 1822 (Dec. 13) 1919.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Gossnitz: Inaug. diss., Jena, 1903.
2. Vogel, K. M.: Am. J. M. Sc. 145: 206-219, 1913.

There is usually a loss of weight during the acute stage, with a gain in the interval, when free from symptoms. The position of the patient also influences the symptoms. Some are unable to lie down because of aggravation of the complaint, while others are able to lie only on one side.

PHYSICAL SIGNS

In the large hernias the findings are usually definite and easily recognized. In the small ones, however, it may not be possible to demonstrate any abnormal findings.

The affected side may appear larger. Litten's sign is often absent on the affected side. The heart may be found to be displaced.

Tympany may be elicited where normal pulmonary resonance should be found. The note may change with posture or at different times, owing to the presence of fluid in the viscera in the hernia or fluid in the sac. This variation in the findings is very significant for the diagnosis of hernia. Breath sounds are usually absent over the tympanitic or dull area. Frequently gurgling sounds are heard. Succusion may be elicited.

The roentgen-ray findings are the most important and conclusive. With the fluoroscope one can readily see the high position of the diaphragm on one side, with one or more of the abdominal viscera protruding into the elevated area. With the opaque meal the stomach or colon or both may be demonstrated in the hernia. The displacement of the heart and the lungs and the change of position of the abdominal viscera are all readily seen. The stomach alone, or the stomach and colon, are found most frequently in the sac. The small intestine and the liver and the spleen have also been found in the hernia.

DIFFERENTIAL DIAGNOSIS

Hernia of the diaphragm must not be confused with eventration, pneumothorax, subphrenic abscess or diverticulum of the esophagus. The differential diagnosis is usually not difficult. However, eventration offers a great deal of trouble in differentiating it from large hernias. The term eventration is rather loosely used by some authors. It should be limited to cases with atony or paralysis of half of the diaphragm. J. P. and D. Y. Keith state their differential diagnosis based on roentgenologic findings as in the accompanying tabulation.

In cases with hernia, bismuth can often be demonstrated in the colon above the level of the bow line of the diaphragm.

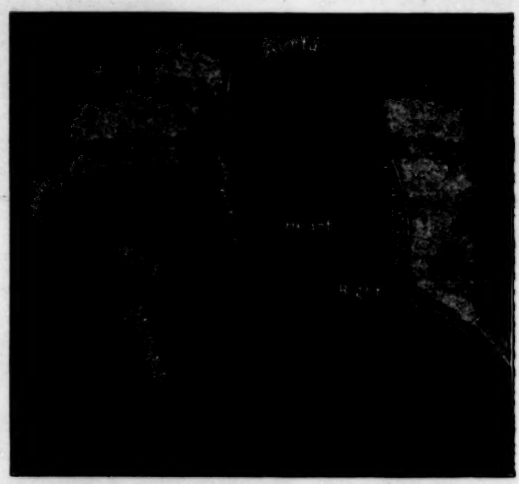
TREATMENT

Aside from palliative medical measures, the only treatment is surgical repair of the hernia. Although the operation is at times very difficult, yet a number of successful operations are recorded in the literature.

REPORT OF CASE

History.—Mr. M., aged 42, who consulted us in November, 1919, sixteen years before, while wrestling, felt a sudden severe pain in the left side, and this continued for several days. Since that time he had not been well. He had had recurring periods of abdominal distress, especially associated with constipation. By forced measures, a large evacuation was induced at these times and was accompanied by temporary prostration. Then he would have an interval of comparative comfort. These attacks had been coming more frequently until there were more than one a week. Between attacks stools were frequently ribbon-like and contained mucus, but no blood was ever noted. He had frequent headaches and malaise. There were attacks of severe epigastric pain in the early morning hours, which were relieved by alkalis, and he also had had sharp pains several hours after meals, which were relieved by food. He had never had nausea or vomiting.

Physical Examination.—The patient was well nourished and robust. The eye reactions were normal; the reflexes were intact, and likewise no abnormalities were to be found in the nervous system. The lymphatic system showed nothing abnormal. There was no deformity of the chest. The apex beat was seen faintly toward the ensiform. Litten's sign was absent on the left side. There was an area of tympany below the angle of the scapula on the left, and the breath sounds were faint in this region. Gurgling sounds were heard in the axilla and beneath the angle of the left scapula. The right border of the heart was found 1 inch to the right of the right sternal border, and the apex was displaced inward and downward. The heart tones were normal. The systolic blood pressure was 112, and the diastolic 85. The abdominal findings were negative. The liver was normal and the spleen could not be palpated. The urine showed no albumin, sugar or casts, but did show a large amount of indican. The stomach test revealed normal acids and ferments, and there was no occult blood. The motility was normal. The stool showed no occult blood. The blood gave a picture of secondary anemia of moderate grade. The Wassermann test was negative. The fluoroscopic examination revealed a high diaphragm on the left side which involved the inner two thirds. In this pouch gas-filled viscera were seen. The heart was crowded to the right.



Left leaf of diaphragm high and arched; stomach in pouch; to right and below, splenic flexure of colon.

On giving barium in buttermilk, the stomach was found in this pouch and to its left the splenic flexure of the colon was seen. This was more apparent when the patient was in the reclining position. The stomach did not show an hour-glass appearance. Food dropped readily from the part above the

bow line of the diaphragm into the part of the stomach below and the stomach emptied in normal manner. The duodenal bulb was normal. The liver shadow was normal and there was no tenderness over the appendix or the gallbladder.

ABSTRACT OF DISCUSSION

DR. JAMES T. CASE, Battle Creek, Mich.: In five cases of diaphragmatic hernia the stomach was involved in the hernia, and in four cases the colon was involved. Three of these nine patients were hunchbacked, and I have wondered if it would not be possible that deformity of the spine and the accompanying unequal pull on various portions of the diaphragm might not predispose to this condition.

DR. ERNEST CLYDE FISHBAUGH, Los Angeles: I had one case in which, from the history and the physical examination, I felt sure such a condition existed. On the morning of the examination, the symptoms of fullness in the stomach, belching and distress, of which the patient complained, were absent. Roentgen-ray examination revealed a normal stomach, in normal position. Next day his symptoms were present. The stomach was again roentgenographed and the greater part of it and of the splenic flexure were in the left side of the thorax. This case showed the possibilities of a roentgen-ray error in the study of diaphragmatic hernia.

DR. W. O. NISBET, Charlotte, N. C.: A man was standing on a table doing some work. The table tilted and he was precipitated from a second story window into a pile of drygoods boxes on the ground below. He was considerably injured about the thorax, and very much shocked. During the roentgen-ray examination the diaphragmatic hernia was discovered. The man gradually recovered from his thoracic injuries and although the hernia remained unreduced, was back at his work and able to take his food satisfactorily.

DR. F. A. SPEIK, Los Angeles: A boy, 5 years old, exhibited symptoms of ulcer of the pylorus, together with signs of obstruction. He had a hernia of the stomach through the left leaf of the diaphragm. He was operated on by the subdiaphragmatic method, and entirely relieved of the obstructive symptoms, and cured. As for the differential diagnosis of diaphragmatic hernia, particularly with relation to diverticulum of the cardiac end of the esophagus, one is apt to miss a diverticulum in the lower end of the esophagus by depending entirely on the plate method, as most of the bismuth or barium may stay above the diaphragm, and the condition may not be recognized as a diverticulum of the esophagus. I saw such a case diagnosed hernia of the stomach by a competent roentgenologist.

DR. MILTON PORTIS, Chicago: One of the authors referred to in the literature said that he had operated and found a small diverticulum that he had not been able to diagnose either clinically or roentgenologically. He emphasized the fact that in case of obscure abdominal symptoms, when the abdomen was opened and the definite lesions were not found in the usual, ordinary places, he always searched the diaphragm very carefully for evidences of these small hernias.

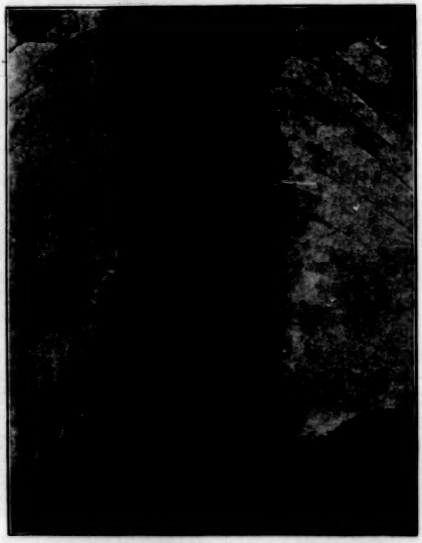


Fig. 1.—Multiple sarcoma of the spine, showing expansile tumors of the vertebrae simulating circumscribed abscesses.

SOME DIFFICULTIES IN THE DIAGNOSIS OF OSTEOSARCOMA*

ROBERT B. COFIELD, M.D.
CINCINNATI

The early recognition of osteosarcoma is probably one of the most difficult, as well as one of the most important problems in the differential diagnosis of bone diseases. As its primary origin is in the medulla or periosteum of bone, as it is not confined to any particular age in life, and as it not infrequently runs an irregular clinical course on account of the wide variation in its histologic elements, its early recognition is extremely difficult. The fact that a deferred diagnosis not infrequently means the sacrifice of the patient's life, while a mistaken diagnosis may result in the needless loss of the patient's limb, brings to us a realization of the importance of a careful study of this problem.

Sarcoma involving the spinal vertebrae and the short bones, such as the tarsus, is probably more difficult of recognition than that occurring in the long bones. Central or medullary sarcoma is frequently more confusing than the periosteal variety. Occurring, as it does, where we are accustomed to find chronic inflammatory processes developing, it is frequently confused in the beginning with tuberculosis, syphilis and osteomyelitis. On account of its proliferative character it not infrequently takes on characteristics simulating new growths, such as osteoma, chondroma, myeloma, and myositis ossificans.

Since there are no pathognomonic symptoms or definite serologic reactions whereby we can recognize the early appearance of primary osteosarcoma, we are compelled to rely for a diagnosis on: (1) the clinical data; (2) the roentgen-ray examinations, and (3) exploratory operation with macroscopic and microscopic examination of the pathologic material.

CLINICAL DATA

The clinical course of osteosarcoma varies according to its origin and degree of malignancy, and whether it is of the medullary or periosteal variety. Medullary sarcoma occurring in the long bones usually has its origin in the region of the metaphysis, and soon takes on a rapid destructive effect, invading the shaft and breaking through the cortex, where it

* Read before the Section on Orthopedic Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

is prone to involve the surrounding tissues; the epiphyseal and joint cartilages are the most resistant barriers to its invasion. Pain, of a severe boring character, is often the first indication of its presence; and on account of its proximity to the joint and the accompanying effusion which may appear in the articulation, the condition is often mistaken at first for an arthritis. Since the pain is neither increased by motion nor relieved by fixation, the arthritic involvement can usually be ruled out. An irregular temperature with elevation to 99 or 100 F. occurs, especially in the rapid growing form. A leukocytosis may be present to some extent, and some authorities believe that an eosinophilia is a sign of value in the diagnosis of this variety. The Bence-Jones protein reaction in the urine may be present; but since this can occur in other severe bone marrow affections, it is of doubtful value in differentiation.

Since metastasis is disseminated through the blood stream, involvement of the lympathatic glands does not occur until late in the disease, with the possible exception of melanotic sarcoma. Metastatic deposits in the lungs may occur, producing an irritating cough and the characteristic oval sarcomatous areas depicted in the roentgenogram. Decalcification of bone at the seat of the lesion may result in a spontaneous fracture. The rapid growth of the neoplasm and the infiltration of the surrounding tissues cause pressure on the deep veins, resulting in an engorgement of the venous circulation in the overlying skin. Cachexia soon develops, the patient rapidly loses weight, and life is rarely prolonged for a period exceeding two years, in inoperable cases.

Fig. 3.—Lateral view of spine shown in Figure 1, revealing the crushed vertebral bodies.

Sarcoma of the spine is usually of the medullary variety, and most frequently involves first the bodies of the vertebrae. The clinical characteristics are similar to those occurring elsewhere in the osseous system, with the exception that here we soon encounter the formation of a gibbus from the crushing of the vertebral bodies by the superincumbent weight, and the rapid development of a paraplegia from the destructive invasion of the spinal cord. The examination of the spinal fluid may give a positive reaction in Lange's gold test, and the yellow color of the fluid may suggest the presence of malignancy.

The clinical picture of periosteal sarcoma varies but slightly from the myelogenous variety. The pain which the patient experiences is not of the severe boring character, but more of an ache; the tumor mass, being external to the shaft of the bone, is more easily recognized, and the early invasion of the contiguous joint is more likely to occur.

ROENTGEN-RAY EXAMINATION

While the roentgenogram is one of the most important adjuncts in differentiating bone diseases, it is often impossible to make a diagnosis, by the roentgen ray alone, in the early or atypical cases of osteosarcoma. It may necessitate serial examinations as well as a careful study of the full clinical data, and occasionally an exploratory incision to be positive of the true nature of the disease.

The roentgen-ray picture of central sarcoma of the long bones is one of irregular destruction, with little or no tendency toward new bone formation until the periosteum is involved or broken through. The lesion is usually confined to one area, although multiple lesions are occasionally observed. Medullary sarcoma in the beginning may be confused with myeloma, cyst and osteomyelitis. Since they frequently have the same point of origin and are more or less destructive in character, it may require repeated roentgen-ray examinations to differentiate these conditions. In myeloma, the globular outline of the tumor is maintained during its expansion; the swelling shows little or no tendency to extend along the shaft or break through its capsule and invade the surrounding tissues and, when completely removed, does not recur or produce metastasis; myeloma was formerly classified as a nonmalignant giant cell sarcoma, and is probably the same condition as described by Barrie under the title "chronic hemorrhagic osteomyelitis." In cysts, the cell wall is usually sharply outlined and clearly defined, and shows no tendency toward rapid expansion and invasion.

In suppurative osteomyelitis the roentgen-ray findings are often not definite enough in the beginning to make a diagnosis; but as the disease progresses, the inflammatory redness of the skin appearing over the rapidly growing tumor would suggest a pus infection rather than malignancy.

Sarcoma involving the spine may portray an expansile tumor of the vertebrae simulating a circumscribed abscess when viewed in the anteroposterior position; and at the same time a lateral view may reveal the crushing of the vertebral bodies, as seen in Pott's disease. In other cases the extensive destruction of the vertebrae, accompanied by more or less hyperplasia of bone, may resemble syphilitic spondylitis. The severe pain, which is not relieved by fixation, the rapid inva-

sion of the surrounding tissues and the early involvement of the spinal cord, with a resulting paraplegia, strongly suggest malignancy.

The roentgen-ray picture of periosteal sarcoma is more distinctive in character, the new bone formation showing a trabeculation or spiculation at right angles with the shaft of the bone and presenting a smoky appearance. Early in its course it may be mistaken for osteoma, osteochondroma and myositis ossificans. Osteoma and exostoses are readily recognized, as they are conical or pedunculated, and their sharp outline is continuous with the bone from which they arise. Osteochondroma, when growing from the epiphysis laterally, gives a rather typical appearance; when of central origin it is more confusing. Either form may at any time take on the characteristics of malignancy, indicated by rapid growth and destruction of the enveloping capsule.

Myositis ossificans and ossifying hematoma, the latter occurring in subperiosteal hemorrhage from injury or scurvy, show a definite bony border due to the deposit of calcium salts, and the bone is laid down parallel to the shaft rather than perpendicular, as seen in periosteal sarcoma.

The diagnosis is most difficult when a rapidly growing periosteal sarcoma invades the adjacent joint; as the disease spreads to the joint capsule and periarticular tissues, the joint takes on a fusiform shape and symptoms simulating a tuberculous, syphilitic or hemophilic lesion, the latter particularly when blood is aspirated from the joint.

Carcinoma of the osseous system is rarely confused with sarcoma, since carcinoma is of metastatic origin and always secondary to cancer elsewhere in the body; when occurring in bone, it usually attacks the cancellous tissue first and shows areas of regeneration along with the destructive process. I have seen a pathologic fracture of the femur heal under the influence of mechanical fixation only to break down again after the support was removed.

Fig. 3.—Sarcoma of spine, showing extensve destruction extending to the ribs.

EXPLORATORY INCISION

Clinical observations and roentgen-ray studies should not be continued over too long a time. When the clinical data and roentgen-ray examinations are not sufficiently distinctive to make a diagnosis, an exploratory incision is justified. If the presence of malignancy is established, operative measures, unless they are contraindicated, should be carried out at once, as cells set free from traumatizing the tumor mass may produce metastasis. To one familiar with the gross appearance of sarcomatous tissue, a macroscopic examination is usually sufficient. When a microscopic examination is called for to corroborate the diagnosis, too much reliance must not be put in the pathologic report, especially when it conflicts with the clinical and roentgen-ray evidence, as the report may be made from sections that are not typical.

ABSTRACT OF DISCUSSION

DR. FREDERICK J. GAENSLEN, Milwaukee: Diagnosis of these conditions is at times a very difficult proposition. The work that Dr. Bloodgood has been doing in collecting clinical data and operative results in cases of bone tumors seen by many men throughout the country is very important and will without doubt have far-reaching results. Not any one surgeon is apt to see in his own practice a sufficient number of these cases to give him that positive knowledge which is so essential in the individual case. The exceptions to the rules are too numerous. It is only by coordinating a large amount of clinical material that we can enlarge our own knowledge of the lesions in question. There has been a question as to whether the term giant-celled sarcoma should be used at all. The word sarcoma immediately conveys an idea of malignancy, indicating the advisability of radical surgery, and unless we are on our guard as to the condition actually present we may be led to do more radical surgery than necessary. Dr. Cofield has dwelt on the macroscopic findings in these cases. In all cases in which there is any legitimate doubt as to the nature of the tumor, one should operate with a tourniquet in place, and if the gross appearance of the tumor and of the lining of the wall is such as to make you feel positive that you are dealing with a malignant tumor, then amputation should be done. The application of a tourniquet is very important, because we do not know just when the metastatic deposits appear. During the operation there is much opportunity for dissemination of the tumor elements, in which event these cells might be sent into the blood stream almost immediately and possibly into the lungs where a great many of the deposits occur. This section might do well to undertake in an organized way the study of these conditions. If that plan were considered feasible and a committee were appointed to carry out the details, suitable history sheets could be gotten up so that in the taking of histories none of the important points would be neglected. The Wassermann test should, of course, be used in all cases.

We see few cases of malignant disease of the spine, and the fixation principle mentioned by Dr. Cofield is very important. If you have immobilized the trunk or an extremity for a supposedly tuberculous lesion and find there is no relief from pain in spite of efficient fixation, the possibility that the condition is malignant should be gone into very carefully.

DR. MELVIN S. HENDERSON, Rochester, Minn.: Dr. Gaenslen emphasizes that we should not be too radical. Nevertheless,

when our treatment is not radical enough in those borderline cases that are malignant, our patients will succumb to conservative surgery. The fresh tissue examination at the time of operation is essential in the handling of these conditions. Sometimes the pathologist cannot make a definite diagnosis and we are in a quandary as to what should be done. It should be remembered that the clinical history in this group is just as important in the making of a diagnosis as is the microscopic picture, and often more so. I have relied on a negative microscopic examination for malignancy in cases in which the patient has exhibited positive clinical symptoms, only to have the patient die with metastases in the lung. If the case is clearly malignant, but one is unable to obtain for the pathologist a piece of tissue satisfactory for his examination, the measures adopted should be radical enough to deal safely with the clinical findings. Amputation should not be tabued. The pendulum has swung too far toward conservatism. The giant-cell tumors, which are nonmalignant, have come into such prominence in recent discussions of the subject that we are apt to include with them the malignant ones. Too much care cannot be exercised in weighing all the evidence before making the diagnosis. We must be just as careful not to err on the conservative side as on the radical, for when we do err on the side of conservatism, we jeopardize the patient's life.

DR. HARRY E. MOCK, Chicago: There is no problem in industrial surgery that causes more trouble than does this one of bone disease. Occasionally a slight injury occurs and the patient does not recover. The disability continues month after month, and the employer or the insurance company that is paying compensation wants to know why. We answer that it is some kind of tumor, or that some trouble connected with the bone has developed. The differential diagnosis as to whether a slight injury that has been sustained has caused osteosarcoma has a very important medicolegal bearing in industrial surgery. I recall two cases, in one of which a man suffered a slight injury to his femur by pulling on a rod which suddenly gave way and struck his knee, causing a slight contusion above the knee. This continued to swell, and in two weeks had swollen to an enormous extent. It was incised in the belief that an abscess was present, but none was found. Gradually the incision healed, the swelling went down, the man was up and around, when suddenly after about two months, the knee again became swollen and painful. A roentgenoscopy disclosed nothing. The case went along for ten months with compensation being paid constantly. Finally roentgenoscopy showed a tumor of the leg, and amputation was done. The man made a good recovery and after four months was back at work. However, he had had a disability extending over a period of a year and two months which could have been cut down by early diagnosis of the osteosarcoma. The other case was that of a man who had a number of mail sacks, weighing several hundred pounds, fall on his femur and severely contuse it. As the swelling did not go down a roentgenogram was taken and a diagnosis of osteomyelitis of the femur was made. The man refused operation and was treated by being kept quiet, etc. Finally another roentgenogram was taken and one of our leading surgeons made the diagnosis of osteosarcoma of the femur and advocated amputation at the hip. The man refused to have the amputation done. He went to a sanatorium to a doctor who diagnoses every disease by looking at the retina. He put the patient on hydrotherapy, wrapped the leg in clay and baked it, had him take building-up exercises, prescribed a good diet and had him sleeping outdoors. One year and two months after this man had been at this sanatorium the U. S. Compensation Commission asking me to investigate the case, as the patient had requested the government to pay his bill. I found that he had two discharging sinuses from the femur. A roentgenogram showed definite osteomyelitis of the femur that had practically healed, except for two small places where there was a little destruction of bony tissue. If that surgeon had amputated at the hip there would have been a loss to the man and to the government and to the entire economic situation.

DR. EDWIN W. RYERSON, Chicago: It is very fortunate that cases of bone sarcoma are rare, because the difficulties of diagnosis are so extreme. It is also fortunate that diagnosis is easier in cases of osteosarcoma of the extremities than in the spine, because we can cure many patients when the extremity is involved, whereas we cannot do very much in cases in which the spine is involved. A medical man fell from a street-car and slightly injured his back. Two months later he became paralyzed and a slight kyphosis appeared in the dorsal region. A number of eminent surgeons concurred in the diagnosis of tuberculosis of the spine. The characteristic and very important sign in this case was that the pains which radiated from his back were intense and were not relieved by the proper orthopedic treatment for tuberculosis of the spine. For eight years he lay on his back, suffering intense pain and completely paralyzed. Finally, after we had arranged to perform a bone grafting operation on the spine in the belief that the condition was tuberculous, the surgeon in charge sent word that a swelling had appeared over the kyphosis. Aspiration was done and nothing but blood was found. We then decided the condition was sarcoma and told the patient that his case would shortly terminate fatally. Six years after onset of the trouble, he was still lingering and it was concluded that the trouble must be tuberculosis. He refused operation. He then went to Canada and lived two years longer. Necropsy showed osteosarcoma. The man had lived eight years with an osteosarcoma. Dr. Cofield's case was neither sarcoma nor tuberculosis. It was probably osteitis fibrosa.

DR. J. D. GRIFFITH, Kansas City, Mo.: Do we have sarcoma of any kind without pain? My reason for asking this question is that a week before leaving home a man came to me because of a "lump" on his leg which had appeared ten days previously. He was 87 years of age, very active, beyond the ordinary sarcoma age. He had never had the slightest pain in the mass. On measuring the thighs I found a difference of 8½ inches in the circumference of the two limbs. He was given roentgen-ray treatments. The growth went down four inches in a week. Microscopic examination of material aspirated from the tumor failed to disclose anything except muscular tissue. The growth is freely movable. The roentgen ray does not show that it has any connection whatever with the underlying bone. No glands are involved. What is it?

DR. HARRY M. SHERMAN, San Francisco: A lumber-jack came to me with a fracture of the left humerus. The roentgenogram showed a tremendous cyst. He had been doing his work perfectly well, without any knowledge of anything the matter with the arm until he fell and fractured it. I did an exploratory operation because the tuberculin and the Wassermann tests were negative. The pathologist who examined the material I scraped out said it looked like sarcoma. The patient had had no pain or tenderness or any other evidence of malignancy. I do not know what the condition is and am waiting to see how it turns out. A young man came with a swelling at the upper end of the humerus. He was negative to everything, and I took him into the hospital on a clinical diagnosis of sarcoma. I made an exploratory incision and opened into a cavity which contained blood. The pathologist said the tissue "looked like" sarcoma. I took the arm off, and then the pathologist demonstrated tuberculosis. I had amputated an arm at the shoulder for a tuberculous process which would have been perfectly amenable to ordinary protective treatment or to an excision.

DR. WILLIS C. CAMPBELL, Memphis: Two or three years ago I saw a man who had intense pain in the sacrum and coccyx. That was the only symptom at the time. The roentgen-ray examination and all tests were absolutely negative. I kept him under observation for about two weeks and finally recommended rest with simple brace. He refused to accept this advice. He saw other surgeons, but finally returned home and his physician incised the pain area. There was a terrific hemorrhage. A small portion of the bone was examined and

a diagnosis of sarcoma was made. Later a diagnosis of carcinoma was made elsewhere and he was treated with radium. After several months the diagnosis was changed to sarcoma. The man finally died from metastases due to sarcoma. Another case was that of a doctor's son, who showed a distinct thickening of the upper third of the femur which looked very much like a low grade osteomyelitis. He had some pain, not a great deal, some limitation of motion in the hip-joint. I operated, found the bone dense, and some sequestrums. The pathologist reported that the condition was a low grade osteomyelitis, a diagnosis in which many men who saw the roentgenograms concurred. After several months the swelling in the leg had gradually increased, cachexia developed and the boy finally died. The differential diagnosis in these cases is a difficult problem and we have to depend largely on the macroscopic findings at the time of operation. In many cases we cannot determine the condition by microscopic examination, but by the macroscopic findings we often can. In advanced cases the correct diagnosis is too late.

Dr. Robert Carothers, Cincinnati: In a case I saw there had been a "gunshot" diagnosis of sarcoma of the upper end of the femur. A man of about 40 gave a history of traumatism to the outer surface of the leg about four weeks previously. He was suffering some pain and was not in good condition physically. He was given a thorough examination. The roentgenographer reported that the tumor was a bone cyst, possibly sarcoma. The patient was prepared for operation, an exploratory incision was made, and we found a gelatinous substance which came out in large quantities. The pathologist examined this material and reported sarcoma. Amputation was suggested, but I did not believe the patient could stand the operation. We left the wound wide open and introduced 25 mg. of radium. This man made an uneventful recovery. We have given him roentgen-ray treatment and also Coley's fluid.

Dr. Robert B. Cofield, Cincinnati: It is unfortunate that we are not able to diagnose these cases early enough to save life. It is only when the condition has gone on to such an extent that metastasis has taken place that we realize what we are up against. Dr. Mock's discussion of the question as relating to industrial accidents is very interesting. Occasionally sarcoma will follow an irritating trauma, as carcinoma is often preceded by some injury or constant irritation. Dr. Ryerson's case is very interesting. The only question in my mind is, did the man really have sarcoma for eight years, or did he first have something else and the sarcoma developed later? Osteosarcoma, especially of the spine, usually develops rapidly. During the past three or four years I have seen three cases of osteosarcoma of the spine. Dr. Griffith's case was probably not osteosarcoma, but some growth in the soft tissues. I do not believe that sarcoma in the soft parts causes the severe pain of sarcoma of the bony tissues. I have been led to believe, and feel still more strongly today after hearing this discussion, that we should not depend too much on the report of the pathologist. We should base our diagnosis on the clinical data and serial roentgen-ray examinations, and if necessary on the macroscopic rather than on the microscopic findings.

The Rights of Children.—How far the states have gone in modernizing their attitude toward the delinquent and the neglected child is shown by the Children's Bureau of the U. S. Department of Labor, in a bulletin entitled "A Summary of Juvenile Court Legislation in the United States." Because of the differences in the structure of their judicial systems, the states have had to meet the problems by various methods of legislative attack. In every state, however, the attempt has been made through legislation to solve the difficult problems involving the unfavorable conditions—domestic, social and economic—under which children are living and developing today. The summary embodies an analysis of the legislation in force at the beginning of 1919, with an appendix giving additional legislation and amendments enacted during 1919.

TYPES OF PNEUMOCOCCI IN THE THROATS OF ONE HUNDRED NORMAL PERSONS *

JACOB MEYER, M.D.
CHICAGO

Stillman [1] studied the mouth secretions of 297 individuals in whom no history of contact with an acute or recent case of lobar pneumonia could be obtained, and found pneumococci in 116 cases. Type I was found in 0.8 per cent. of the cases, Type II not at all, Types II A, II B and II X in 18.2 per cent., Type III in 28.1 per cent. and Type IV in 52.9 per cent.

The present study was made on 100 normal individuals of varying ages, in whom no history of contact with an acute or recent case of lobar pneumonia could be obtained. The work was carried on during February, March and April, 1920, following the epidemic of influenza in Chicago. Swabs from the pharynx and tonsils were spread on 5 per cent. goat's blood agar plates and incubated for from twenty to twenty-four hours. Colonies resembling the pneumococcus were inoculated in plain broth and the organisms tested as to bile solubility and fermentation of inulin. Bile solubility was determined by adding one part of fresh sterilized ox bile to four parts of a broth culture and incubating the mixture for one hour. Type determinations were made by the precipitin and agglutinin methods.

Pneumococci were found in twenty-one intances. Types I and II were not found in any case. Type II A was isolated once. Type III occurred in three instances, and Type IV in seventeen. The organism identified as Type II A by the precipitin method was bile soluble but did not ferment inulin. Of the seventeen strains of pneumococcus Type IV, eight were apparently more readily soluble in bile than the remaining nine. As the diagnosis of this group largely depends on the bile reaction, the bile test was repeated. All seventeen strains were found bile soluble, but the results did not correspond closely with those obtained when the organisms were first isolated. Keegan [2] found "that the differentiation of Type IV pneumococcus and the pleomorphic forms of *Streptococcus viridans* is not without difficulty, and that some may be found to fall within the *Streptococcus viridans* group." Bile solubility tests of broth cultures were not found very reliable for the identification of the pneumococci, some of the fixed types identified by agglutination not showing distinct bile solubility. Similar observations were noted by Nuzum,[3] who found that pneumococcus Type IV and allied green producing organisms varied as to bile solubility and inulin fermentation. Tunnicliff [4] has recently made similar observations as to the green producing cocci in influenza. The present observations point in the same direction. Attention is also called to the difficulty in differentiating colonies of pneumococci from colonies of *Streptococcus viridans*. It is therefore quite likely that the variations in the percentage of pneumo-

* From the John McCormick Institute for Infectious Diseases.

1. Stillman, E. G.: J. Exper. Med. **24**: 651 (Dec.) 1916; **26**: 513 (Oct.) 1917.
2. Keegan, J. J.: The Prevailing Pandemic of Influenza, J. A. M. A. **71**: 1051 (Sept. 25) 1918.
3. Nuzum, J. W.; Pilot, Isadore; Stangl, F. H., and Bonar, B. E.: Pandemic Influenza and Pneumonia in a Large Civil Hospital, J. A. M. A. **71**: 1562 (Nov. 9) 1918.
4. Tunnicliff, Ruth: Observations on Green Producing Cocci of Influenza, J. Infect. Dis. **26**: 405 (May) 1920.

coccus Type IV found in normal persons may be due to difficulties of differentiation between pneumococci and green producing streptococci.

104 South Michigan Avenue.

Clinical Notes, Suggestions, and New Instruments

REPORT OF AN EXTREMELY LONG VERMIFORM APPENDIX

GEORGE B. LAKE, M.D., COLUMBUS BARRACKS, OHIO
Major, Medical Corps, U. S. Army

The measurement of the length of the vermiform appendix in thousands of cases has established the average as from 3 to 3½ inches (7.5 to 8.75 cm.); but wide variations from this length are not infrequent. Morris[1] states that "we occasionally find an appendix eight inches long." Gray's Anatomy gives the extreme variations in length as from 1 to 23 cm.; Morris' Anatomy as from 1 to 6 inches: Deaver's Surgical Anatomy as from 1 to 23 cm.; Keen's Surgery as from 1 to 9 inches; and Da Costa's, "Modern Surgery" states, on the authority of Monks and Blake, that in 641 necropsies the shortest appendix measured one-third inch and the longest 9½ inches.

Appendix removed from colored soldier.

Kelly, in "The Vermiform Appendix and Its Diseases," states that the longest appendix on record measured 33 cm., and the second longest which he records was 24 cm. He reports three others, 21.5, 22 and 23 cm. long, as having been of such extreme length as to be worthy of particular notice.

A search of such literature as is available fails to reveal any figures different from those quoted, and in view of this fact it is believed that the case to be detailed, in which an appendix measuring 29.4 cm. (11¾ inches) in the fresh state and 26.5 cm. (10⅜ inches) after preservation, was removed at operation, will be of interest as being the second longest so far reported, particularly as Morris' states that "measurements taken from specimens removed at operation will give too short an average length, because the structure contracts almost immediately on separation from the cecum."

It is also worthy of note that in comparing the length of appendixes removed at operation with those measured at necropsy, the former will average about 1 cm. relatively shorter than the latter for the reason that approximately this amount of the organ remains attached to the cecum after appendectomy.

The specimen here described has been forwarded to the Army Medical Museum, Washington, D. C. The patient, J. P., a colored soldier, aged 22, a cook, had had "stomach trouble," on and off for more than a year. A few days before the present trouble he had an attack which was relieved by cathartics. June 1, 1920, he complained of severe griping pain in the lower abdomen and the small of the back. He had vomited once or twice.

The patient was normal except for exquisite tenderness all over the abdomen. The lightest touch anywhere on the body was followed by a strong voluntary contraction of all the abdominal muscles. Decubitus was normal. The temperature was 99.4 F., pulse 82, and respiration 20. There was no localization of pain or tenderness anywhere.

This condition continued until June 3, with slight attacks of vomiting. Pain and tenderness were never localized. The temperature was never above 99.4. June 2, the leukocyte count was 19,500, with 73 per cent. polymorphonuclears; June 3, 21,500, with 68 per cent. polymorphonuclears. On the latter date a diagnosis of appendicitis was made and appendectomy performed. Masses of very dense and extensive adhesions were found. The appendix was not palpable. With great difficulty the cecum was brought into the wound after numerous adhesions had been broken up. The appendix was found to be entirely retroperitoneal, dipping down into the pelvis and passing upward and backward to a point nearly opposite the umbilicus. The base of the appendix was cleared by making an incision in the peritoneum over the head of the cecum, and the organ was then carefully dissected out with the finger during which process it ruptured, discharging several cubic centimeters of pus, which gave a pure culture of *Streptococcus hemolyticus*.

When removed, the appendix was entirely denuded of peritoneal covering, and measured 29.4 cm. in the fresh state. The rupture had occurred at the tip. The stump of the appendix was buried with Pagenstecher's linen, and the wound in the peritoneum around the cecum was closed. One drainage tube was inserted into the pelvis and one up to the liver. The wound was closed in the routine manner. Recovery was rapid and uneventful.

1. Morris: Lectures on Appendicitis, New York, G. P. Putnam's Sons, 1895.

STERILIZING URETERAL CATHETERS

WILLIAM S. ROBERTSON, M.D., CHARLESTON, W. VA.

The difficulty of sterilizing ureteral catheters without boiling may be overcome in this manner: A tall cylinder (1,000 c.c.) is filled with any suitable antiseptic solution, the eye-end of the catheter is carried to the bottom of the vessel, the catheter is filled with the solution by means of a convenient syringe, and the distal end of the catheter is promptly depressed so that siphonage is established. The catheters require no further attention. The lumen is bathed with a constant antiseptic *current* until the cylinder is emptied, which is from fifteen to thirty minutes. The procedure may be repeated as often as deemed necessary by transferring the siphoned solution to the original container. The simplicity and effectiveness of this method should appeal to all cystoscopists.

Coyle and Richardson Building.

REPORT OF CASE OF FRACTURED CERVICAL VERTEBRAE

F. L. PRESTON, M.D., EL DORADO, KAN.

N. P. B., a man, aged 57, farmer, height 5 feet 7 inches, weight 170 pounds, strongly built and in good health, was struck from the back by an automobile, Feb. 2, 1920, and thrown violently forward with the head bent on the chest. The car then hit him the second time and stopped with the front wheels on his back. The patient was carried to the office of a physician and told he was all right and could be taken home. At this time he was suffering great pain in the neck and could not turn the head to either side, nor could he bend it forward or backward. He was not able to walk or sit up in bed because of a "paralyzed condition" in the legs and one arm, and because he could not hold his head up. He remained in bed for some weeks, using only liniment on his "lame and sore and stiff" neck.

He gradually recovered from the muscle weakness, except in the right arm, and the pain in the legs disappeared. He continued to have the lame and stiff neck, and this finally brought him to the hospital, June 12, for a roentgenogram, which revealed plainly the present condition of the cervical vertebrae. The length of time since the injury has of course made the outline of fragments quite indistinct, because of callus formation.

Physical examination reveals the sixth cervical spine 1 inch out of line with the seventh, the neck very tender and the muscles rigid. He complains of a great deal of tenderness and a "slipping feeling" in the region of the atlas, and severe pain on pressure over the sixth and seventh cervical vertebrae. He says it makes him "tingle all over." The head moves some with difficulty, probably because the patient is afraid to let the neck be flexed. I was unable to detect any nervous disturbance or suggestion of one, except as mentioned above. The patient seems in perfect health, but when he rides in a car he supports his head on his hands, and when he gets up from a prone position, some member of the family helps him raise his head.

Present condition of cervical vertebrae.

224 West Central Avenue.

INTRA-UTERINE INTESTINAL OBSTRUCTION FROM INSPISSATED SEBACEOUS MATERIAL

ARTHUR L. SMITH, A.B., M.D., AND CARL H. BASTRON, M.D.,
LINCOLN, NEB.

REPORT OF CASE

History.—Baby R. was born, Nov. 6, 1919. The presentation was right occiput posterior. A midforceps extraction was performed on account of the irregular and rapid fetal heart. The head and shoulders were finally delivered without a perineal tear, but a double episiotomy was necessary before the abdominal portion could be extracted. The child was born in asphyxia pallida, which was probably due to the compression of the cord by the distended abdomen. The baby made no attempt to breathe. The heart beat rapidly and weakly for about an hour.

Necropsy.—The abdomen was greatly distended; and when it was opened, a dark brown fluid, 550 c.c. in amount, was recovered from the peritoneal cavity. The ascending, transverse and upper half of the descending colon were greatly dilated and filled with meconium. The remaining portion of the large intestine to the anus was a small, round tube. There was no external pathologic condition at the point of collapse of the descending colon. The lower colon and sigmoid were opened and a dried sebaceous plug (Fig. 1) closed the tube. Distally to this the bowel was patent and contained a small amount of sebaceous material but no meconium. The peritoneum was normal.

Fig. 1.—Impacted sebaceous plug (1); contracted descending colon and sigmoid (2); distended colon, cecum to descending colon (3).

Other findings were: cortical hemorrhage in the parietal region of the brain; open interauricular septum of the heart, 1 cm. in diameter; absence of air in the lungs, and a complete double right ureter (Fig. 2). The baby weighed 9 pounds without the abdominal fluid.

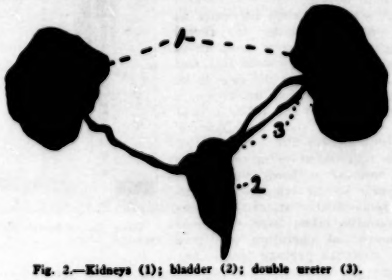


Fig. 2.—Kidneys (1); bladder (2); double ureter (3).

COMMENT

The reason for reporting this case is a statement by Bullowa and Brennan[1] that there is "no report of the occurrence of a similar case."

411 Funke Building.

1. Bullowa, J. G. M., and Brennan, R. E.: Intra-Uterine Intestinal Obstruction from Inspissated and Impacted Meconium, J. A. M. A. 73: 1882 (Dec. 20) 1919.

SUTURE OF THE HEART

ASA W. COLLINS, M.D., SAN FRANCISCO

History.—C. G., aged 20, automobile salesman, admitted to the French Hospital, March 15, 1920, had shot himself in the chest two days before with a 32 caliber revolver and was removed to the Central Emergency Hospital in profound shock, blood flowing quite freely from the wound in the chest, necessitating frequent changing of the dressings. I examined him first at the Central Emergency Hospital. He was thin but well developed, 6 feet 2 inches tall, and weighed about 175 pounds. He was propped up in bed, pale to the point of exsanguination and in a state of collapse. He complained of pain and weakness and often called for water, which had been given him freely. The chart showed, since his entrance, temperature not over 97, pulse from 128 to 150, and respiration from 38 to 48. Morphin sulphate, one-sixth grain, had been given him every four to six hours. He vomited a dark brownish fluid and coughed some blood. The left pleural cavity had been aspirated and 2 pints of blood withdrawn. He had the appearance of one who had but a short time to live. The dressings were removed, and blood flowed from a small hole about the diameter of a lead pencil, situated 4.5 cm. to the left of the midsternal line and 1 cm. above a line drawn between the nipples, and from another hole in the back 10 cm. to the left of the median line and on a level with the hole of entrance of the bullet in front. On inspection it seemed that if the bullet had passed straight through, it must have passed through the heart.

Operation.—He was removed to the French Hospital and an operation to stop the bleeding was decided on. At 8 p. m., under ether anesthesia, with the assistance of Drs. B. F. Alden and V. E. Putnam, I made an incision at the junction of the third interspace with the sternal border, downward to the fifth interspace, and then laterally to the right from each end of this incision for a distance of 10 cm. The knife was made to pass through the costal cartilage close to the sternal border. The ribs were cracked at the outer end, and the flap containing skin, muscle, cartilage and rib was turned outward. There was an immediate gush of blood which masked the whole field of operation. Laparotomy pads were introduced into the pleural cavity and all the blood was removed, thus giving a good view of the field of operation.

The lung had collapsed into the vertebral gutter. The opening into the pericardium was easily found and the course of the bullet readily followed. The wound in the pericardium was about 3 cm. long, and permitted the blood ready access to the pleural cavity. The pericardiac wound was enlarged and a wound of the outer side of the left ventricle about midway between the auricle and apex was seen. This penetrated through the outer edge of the muscle. A clot had formed, yet blood was seen to leave the heart at each pulsation. The pulsations were so rapid and feeble that it was impossible to distinguish whether the blood spurted during diastole or systole. The heart was sutured with two No. 2 chromic gut on a full curved intestinal needle. This stopped the bleeding immediately. The pericardium was closed with continuous chromic gut, the cartilage sutured with chromic gut and the skin with interrupted silkworm. No bleeding was seen to come from the lung or parietal pleura. A drain was placed in the puncture wound of the chest for drainage of the pleura.

Postoperative Course.—During and after the operation, 1,000 c.c. of hypertonic solution was given intravenously. The duration of the operation was thirty minutes. After operation the foot of the bed was raised, external heat applied, etc. The patient suffered shock for twelve hours. The following five days showed a gradual improvement, although the pulse remained from 100 to 130, respiration from 30 to 38, and temperature from 99 to 102.

Culture from the drain revealed *Staphylococcus aureus.* The patient's appetite was good and he conversed freely.

At midnight on the sixth day after operation he became irritable and restless and wanted to leave the hospital to visit his wife, who he claimed was the cause of his misfortune. A temporary absence of the nurse gave him the desired opportunity, and when she returned to the room the patient had disappeared. A fifteen minute search disclosed him in the garden of the hospital. The next day he had a chill followed by a consolidation of the lower lobe of the right lung, and he died, March 26, just thirteen days after the injury. The body was delivered to the coroner.

Necropsy.—The heart and pericardium had healed completely. There was very little blood-tinged fluid in the pericardium. Death was due to an empyema and pneumonia. The pulse was regular and of good volume a few days after operation and until shortly before death.

126 Post Street.

A TRACTION SPLINT FOR FRACTURES OF THE HUMERUS

FRANK N. POTTS, M.D., BUFFALO

This splint was developed for traction in fractures of the humerus. It is best adapted to those cases in which the fracture is of the shaft, 3 inches above or below the joint.

Front and rear views of traction splint for fractures of the humerus.

The splint is made of some light wood, 3 inches wide, 19 inches long and ¾ inch thick. It is made concave on the inner side for coaptation. A piece of drill steel 18 inches long and ¼ inch in diameter should first be bent to have a hook in the upper end, and an arm 1½ inches long extending from the hook to the shaft. The shaft is approximately 14 inches long. This shaft is threaded from the lower end up to within 2½ inches of the arm going over to the hook; a wing nut is run up on the threaded shaft. On the back of the splint, in the upper 9 inches, is fastened a piece of ⅝ inch metal tubing. This holds the extension rod and gives a surface on which the rod may be extended by use of the wing nut. To the inner side and lower end of the splint is fastened a 2 inch right angle bar, ⅝ inch wide.

A piece of adhesive plaster 2 inches wide and sufficiently long to form a loop in which can be fastened the metal bar of the lower portion of the splint is then applied to the inner and outer sides of the lower portion of the arm, care being taken that the adhesive does not extend more than 1 inch above the site of fracture. The arm is then bandaged very carefully with a thin layer of wadding, and the bar at the lower end of the splint is fastened in the loop of adhesive plaster. A piece of ¾ inch felt pad about 6 inches square is then covered with wadding and placed in the axilla. A web strap ¾ inch wide is then passed over the felt and brought up over the extension bar at the hook and fastened. Coaptation splints are then placed about the humerus on the outer and inner sides. Finally, the entire dressing is bandaged with gauze.

The advantages of this splint are: (1) possibility of obtaining any desired degree of extension; (2) ease of application; (3) constant readiness; (4) comfort to the patient, and (5) neatness in appearance.

The forearm is carried in a sling.

523 Franklin Street.

Surgical Examination.—Sir George Humphry crystallized the rules for the examination of surgical patients in the words, "Eyes first and much; hands next and little; tongue not at all." It is useless to begin by asking about the family history in a case of acute intestinal perforation, yet many do so.—Sir D'Arcy Power, Surgical Aphorisms, *Clin. J.* 49:28 (Feb.) 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, NOVEMBER 6, 1920

THE SOURCES OF MUSCULAR ENERGY

The contractions of the body musculature occasion the foremost demands for the expenditure of energy in the organism. Work calls for sources of energy—in the long run, for food fuel. There was a time when muscular work was supposed to be performed at the expense of increased destruction of the tissue in which the contractile transformations take place. In Liebig's opinion, this assumed physiologic breakdown of the muscular tissue rich in albuminous complexes necessitated in turn a replacement or reconstruction that could be secured only by furnishing protein in the diet. The Munich school of physiologists led the way, however, to the demonstration that under ordinary circumstances muscular work is not performed primarily and preferably at the expense of nitrogenous products. In a person living on a mixed diet, increased work does not call forth any corresponding or noteworthy metabolism of protein; the energy expenditure involved is chargeable to the conversion of non-nitrogenous compounds. This is now a well recognized fundamental dictum of the science of nutrition.

Is there any choice between fat and carbohydrate as sources of muscular work? The answer to this question is not only of theoretical interest but also of immense practical import. There is a fairly general assumption that the first call is on the carbohydrates, which include the sugar in the blood and the glycogen stored in the liver and the muscles. The distinguished French physiologist Chauveau [1] went so far as to conclude that possibly fat must first be converted into sugar in the body before it can be used directly for muscular work. This assumption was vigorously denied by the Berlin physiologist Zuntz [2] and his collaborators, who were unable in actual experimental tests to discover a 30 per cent. difference in working energy value between fat and carbohydrate postulated by the hypothesis of Chauveau. At the present moment there seems to be a tacit belief that even if the different foodstuffs are not always equally available, fat and sugar are at least equally efficient as sources of energy in muscular work; that is, they are isodynamically equivalent.

Recent studies of the physiology of muscle, however, have cast doubt on the teaching that this working organ performs like a simple heat engine as the result of the direct combustion of the fuel furnished to it. One may perhaps more appropriately speak of the muscle as a chemical engine from the standpoint of the critics of today, who also believe that definite characteristic chemical compounds are the immediate source of muscular energy. As they have pointed out, if the muscular machine requires that certain reactions take place between definite substances which must be closely allied to carbohydrates, it is almost inconceivable that substances such as fats can be utilized without a transformation involving loss of energy, and one is led to expect that the coefficient of utilization should be lower for other substances than for carbohydrates.

During the last few years, Krogh,[3] of Copenhagen University, just awarded the Nobel prize,[4] to whom we owe fundamental contributions to the technic of investigations in respiratory metabolism, have conducted researches on man to determine the relative value of fat and carbohydrate as sources of muscular energy. One gains the impression from these painstaking investigations that work is more economically performed at the expense of carbohydrate than of fat. For example, in the best series of experiments the net expenditure of energy per calory of technical work varied from about 4.6 calories when fat alone was catabolized to about 4.1 calories when carbohydrate alone was catabolized. The waste of energy from fat is 0.5 calory, or 11 per cent. of the heat of combustion of the fat. Such results could be realized by having the persons perform definite amounts of work (on stationary bicycles) under conditions of diet low in protein and in which fats or carbohydrates, respectively, greatly predominated. The testimony of the subjects was that they performed the work with greater difficulty on fat than on carbohydrate and became much more tired. This possible relation of fatigue to diet is one deserving of careful further consideration. Variations in fatigue may, for instance, be in part correlated with differences in the liability to acidosis in which the differing products of metabolism play a discriminating rôle. It appears that under ordinary circumstances the organism maintains during work a remarkably constant proportion between the amounts of carbohydrate and fat catabolized. This proportion is evidently a function of the available supplies of the two sources of energy.

The "efficiency" of ordinary muscular work may again be calculated as it has been in many previous

1. Chauveau, M.: Compt. rend. Acad. d. Sc. **125**: 1070; **126**: 795, 1898.
2. Zuntz, N.: Die Quellen der Muskelkraft, Handb. d. Biochem. (Oppenheimer's) **4**: 826, 1911.
3. Krogh, A., and Lindhard, J.: The Relative Value of Fat and Carbohydrate as Sources of Muscular Energy, Biochem. J. **14**: 290 (July) 1920.
4. See page 1275.

studies. According to the new Danish data, the net expenditure of energy above the maintenance quota necessary to perform one calory of technical work on the ergometer has varied between about 5.5 and 4 calories. It decreases with increased training and may increase with the onset of fatigue. A good heat engine may approach this degree of efficiency.

SOME MEDICAL HUMORISTS

A bit of humor now and then is welcomed by every class of thinkers, no matter how serious minded may be their daily routine. According to Bergson, humor is a lively sense of the incongruous in the world and in life. It is not strange that physicians should see much humor in their work, since no men see life more intimately than they do. Unfortunately, too few record humorously the things they have seen. Thus, Broxholme, first Radcliffe Fellow at Oxford, although known as one of the wittiest men of his time, nevertheless left nothing permanent as a monument to his wit and humor. In the great literature of humor there appear, however, the names of many physicians. Their works are often tinged with scientific observations or similes characteristic of the medically trained author. The work of Goldsmith, Lever and Smollett, noted English writers, are conspicuous examples. Foremost among medical humorists are the two recently selected by Douglas [1] as the subject of his Harveian Oration before the Edinburgh Harveian Society. One, Rabelais, was a Frenchman; the other, Oliver Wendell Holmes, an American. They are aptly characterized as "laughing philosophers," full of quaint quips and witticisms at the foibles of their time and the failings of human nature. Douglas makes an excellent analysis of their work, particularly from the medical point of view. He mentions Rabelais' great attempt to reform methods of education, and points out that he was interested in the study of the work of the Greek physicians, and above all that he raised the gift of story telling to a height few great writers have ever reached. Rabelais, however, gave up medicine for the practice of another art. Not so Oliver Wendell Holmes: he was famous alike as a scientist and as a writer. He was a master of style—Douglas compares him to Robert Louis Stevenson—and all of his work was illuminated with numerous flashes of wit. How large a part medical knowledge played in this may be judged from the similes employed by Holmes in describing the feelings of the teacher in "Elsie Venner" when gazing at the rattlesnake:

> His eyes were drawn as with magnets towards the circles of flame. His ears rung as in the overture to the swooning dream of chloroform. Nature was before man with his anaesthetics; the cat's first shake stupefies the mouse; the lion's first shake deadens the man's feeling and fear; and the crotalus paralyzes before he strikes.

1. Douglas, C. E.: Two Medical Humorists, Edinburgh M. J. 25: 209 (Oct.) 1920.

As for the reaction of the practitioner on his patients, nothing will so quickly relieve the strain with which most laymen confront the physician as the kindly directed remark accompanied with a smile and a sense of humor. Douglas concludes:

> We need humor in the profession. It is one of its necessary virtues. For who, save ourselves, and perhaps the police, live in such a *milieu* of disharmonies? We live the life pathological; we breathe the vitiated air of the sickroom, the laboratory, the deadhouse; we daily see sights that turn the layman green and giddy; our ears are filled with the burden of all who are in any way desolate or oppressed in mind or body. We are saved, it is true, by those two saving graces within ourselves, the divine instinct of pity, and the fascination of science. But let us also cling to humor, the antiseptic of life. So now abide these three, pity, knowledge and humor; and not the least of these—is Humor.

A sense of humor is not incompatible with dignity. It involves no loss of self respect. Abraham Lincoln was a conspicuous illustrator of the value of a well placed anecdote in the elucidation of a point, and of the witty remark in the release of tension during a personal interview. In medicine, humor is a virtue. The cultivation of optimism and of a sense of humor—both can be cultivated through well chosen books—will make any practitioner a better physician.

THE DISTRIBUTION OF ACETONE IN THE BODY

In certain conditions, both physiologic and pathologic, acetone may be present in the organism in amounts not negligible. At times it becomes a matter of considerable importance to obtain dependable information about them. While it is circulating in the blood stream, acetone may appear in the urine and expired air. The view that the acetone substances—acetone, aceto-acetic acid and beta-oxybutyric acid—are derived in large part from improper and incomplete metabolism of fats in the body has been generally accepted. The importance of careful observations of ketosis, as well as the abnormalities of carbohydrate transformation in the organism of the diabetic, is daily being better appreciated by discriminating clinicians, so that perversions in the metabolism of fat are receiving far more attention than in the past. There is no more potent agency in the prevention of ketosis and the acidosis related to it than the withdrawal of fat from the diet, wherefore Joslin [1] has trenchantly remarked that fat at one time may save the life of the diabetic, but at another may destroy it.

Widmark [2] has recently demonstrated at the physiologic institute in Lund, Sweden, that free acetone belongs to the group of substances that can with the greatest ease penetrate living cells. Hence they diffuse readily throughout the organism and tend to avoid

1. Joslin, E. P.: Treatmnt of Diabetes Mellitus, Philadelphia, 1917, p. 281.

2. Widmark, E. M. P.: Studies in the Acetone Concentration in Blood, Urine and Alveolar Air. II. The Passage of Acetone and Aceto-Acetic Acid into the Urine, Biochem. J. 14: 364 (July) 1920.

undue concentration at any locality or in any special tissue. Acetone itself passes into the urine by the process of diffusion; hence the concentration of this compound in the blood and urine is usually the same. Aceto-acetic acid (diacetic acid), to which the well-known ferric chlorid urinary test of Gerhard is attributable, depends on the characteristic secretory functions of the kidneys for its elimination; consequently its concentration is commonly higher in the urine than in the blood.

It also appears from the observations of Widmark [3] that the elimination of acetone through the lungs is a pure diffusion process. From his data there is no reason to suppose that any secretion of the volatile compound takes place, such as has at times been assumed for the passage of certain gases through the alveolar membranes. From a simple determination of the concentration of acetone in the alveolar air, so commonly collected nowadays in the estimation of carbon dioxid factors, it is possible to secure an accurate calculation of the free acetone concentration of the blood. Widmark points out that accordingly in a diabetic, by combined blood estimation and analysis of alveolar air, one may arrive at an understanding of the relationship between the free acetone and the total acetone in the blood. The method, he adds, has this great advantage, that the relationship between the acetone and the aceto-acetic acid can in no way be disturbed by the analysis: the separation of the free acetone from the aceto-acetic acid is effected, so to speak, with the organism itself as distillation apparatus. The ability to differentiate and estimate the various ketone substances with accuracy, as is already accomplished for the sugar in the blood and urine of glycosuric patients, is likely to prove helpful in the clinic of diabetes.

THE PUBLIC PRESS IN MEDICAL MATTERS

A French physician, Dr. Georges Bourgeau, in 1916 chose as the theme for his thesis for the doctorate in medicine the subject, "The Errors and the Dangers of the Public Press in Medical Matters." [4] In this monograph he does not confine himself to a rodomontade arraigning the public print on general grounds for inaccuracy and misstatement, but with painstaking accuracy cites examples to prove the correctness of his contention. His grievance lies under two separate heads: (1) the deliberate disregard of French law in the question of the exploitation of quack and proprietary preparations, and (2) the fact that the reporting of medical questions is not done by a trained personnel, and that as a result the published accounts are inaccurate and may often work harm to a credulous public.

3. Widmark, E. M. P.: Studies in the Acetone Concentration in Blood, Urine and Alveolar Air, III, The Elimination of Acetone Through the Lungs, Biochem. J. 14:379 (July) 1920.

4. Bourgeau, Georges: Les erreurs et les dangers de la grande presse en matière médicale, Paris, A. Maloine et Fils, 1916.

The French law—the *loi germinal*—has been specific in the matter of the regulation both of the sale and of the advertising of nostrums. As Bourgeau says:

> The *loi germinal* not only forbids the sale of remedies of this class, but also interdicts their advertisement, for in the decree . . . such advertisement is punishable by a fine of from 25 to 600 francs for a first offense, and for further infringement, by imprisonment for from three to six days.

Bourgeau finds no fault with the French code in respect to the regulation of this vicious practice, but he expresses resentment that there is such lamentable failure to enforce it. He cites instances in which conviction has failed through legal technicalities and loopholes, and asks: "Why does not this legislation apply to the press as it does in some instances, though with unfortunate infrequency, to the manufacturers of the nostrums? Some people assert that it is because the newspapers are a power with which the magistracy must reckon, a statement to which I refuse to subscribe." He expresses his sense of this injustice by commenting on the fact that although the press benefits from this class of advertising (and thus becomes equally culpable with the proprietors of the so-called remedies), it makes no effort in behalf of the convicted manufacturers, but leaves them to carry the penalty of conviction while it goes merrily on to the exploitation of other quackeries.

While this deliberate violation of the law of the land is viewed by Dr. Bourgeau as the most serious evil to which the press contributes, he takes up under a second head another evil which should be susceptible of correction. This is the looseness and inaccuracy of statement by the lay press with regard to matters of scientific medical interest. As examples he cites, among others, these captions from newspapers, giving for each the name of the publication and the date of issue: "Contagion Has Been Abolished in Scarlet Fever"; "The Transfusion of Blood Is a Dangerous Procedure for the Donor"; "Arteriosclerosis Is Vanquished"; "One Half of Those Who Are Deaf Are Curable by Radium." In addition to headings of this sort, which have no place save in fiction, Bourgeau very properly takes exception to the process of "snap judgment" in regard to discoveries in medicine and to the publication of reports of advocated or approved methods of treatment. He arraigns the *Matin* in regard to its writings as to the value of antityphoid inoculation. This paper first hailed the discovery as one of incalculable benefit and then attacked it most viciously. The *Matin* says that "nurses in hospitals refuse to serve as 'guinea-pigs,'" and quotes alleged mortalities from the inoculation. So serious did the Assistance Publique regard these statements that it deemed it necessary to have handbills printed and affixed to the walls of hospitals and other places, explaining that the inoculation of nurses was voluntary and that the deaths quoted were three—two nurses who contracted typhoid from patients they were attending, and one who died as

the result of an infected wound of the hand. These facts, says Bourgeau, were easily obtainable by "any serious journalist," and would have avoided the discrediting of the hospitals and the spreading abroad of gross misinformation to the disadvantage of the public.

The same course has been followed with reference to cancer and its alleged cures, with respect to tuberculosis and with regard to the introduction of arsphenamin in the treatment of syphilis. The statements concerning the last seem to him particularly objectionable, for there is a change of attitude from day to day; laudation in one issue to be followed in a succeeding number by the statement that arsphenamin has killed more than syphilis itself. Bourgeau ascribes as the reason for this mass of illogical writing an undue readiness of the newspaper writer to believe:

> Why does the journalist commit so many mistakes in matters medical? It is because he is ready to believe. Science has overthrown the gods; but the necessity for faith has not been done away with, and it is to science that our beliefs turn. The medical man is the latest deity, but the journalist does not see the human personality behind the savant, the man with his mistakes, his personal pride and his self interest. The newspaper believes as a matter of self interest. It sees in a discovery an article to be written, a chance for a sensational heading; and in the haste to be the first to announce it abandons all effort for accuracy as to either facts or time.
>
> The man who writes for the newspaper believes because he is ignorant, and his excuse is that in the multiplicity of things which he is forced to discuss it is impossible for him to have universal knowledge, and that this lack of knowledge forces him to draw general conclusions from single cases.

Some may ask, as Bourgeau does, "Is this really a matter of importance!" His answer is, "Yes, unfortunately, for there are many of the public who believe these things which they read in the papers, and it is this class which abandons a rational treatment for the newest thing exploited. Not infrequently also this results in the failure to seek competent advice, and with what sad frequency do we medical men find in our hospitals tuberculous or syphilitic patients who, having run through all the 'cures' in the newspapers, finally come to us in deplorable shape."

Bourgeau's criticism of the French press applies with equal weight to the press of the United States. Fortunately, in this country there is at least a beginning of betterment, for a few of the larger and better class dailies have recognized the necessity of greater accuracy in this class of reporting and have a trained personnel to cover matters of this sort and insure that the written account may be something more than a fanciful story written by one to whom even the terminology of the subject is an unintelligible jargon. The remedy for the evil lies in the development of the journalistic conscience. Heywood Broun, the critic, recently said: "The reason for complaint against the yellow press is not that it represents with any fidelity the taste of the average man and woman but that it first creates a taste and then satisfies it." There has been created in the minds of hundreds of thousands of newspaper readers a taste for the sensational. The developments of science along medical or any other lines are seldom sensational. To satisfy the artificially created, perverted taste of the newspaper reading public, the newspapers, especially those of the yellow type, make their reports of medical matters sensational. When such papers can be brought to a realization of their responsibilities to the public, especially in matters affecting health, there will be an end to the fantastic fiction of newspaper pseudomedical science.

Current Comment

HELPING THE COUNCIL

If they were built that way, the members of the Council on Pharmacy and Chemistry of the American Medical Association might become discouraged at the apparent indifference of many members of the medical profession to their efforts. There are many physicians who, while figuratively patting the Council on the back, actually do nothing to aid its efforts. On the other hand, there are men in the profession who give the Council active support instead of merely passive appreciation. The letter that follows was written by such a man to a pharmaceutical concern:

> I am receiving circular advertising from you concerning ——— ——— solution, and I am writing to suggest that until these products have been approved by the Council on Pharmacy and Chemistry of the American Medical Association, you are wasting your postage on the practice. Aside from the fact that these products do not appeal to me personally, I feel that I am not in a position to judge the value of such products and I depend entirely on the large clinical opportunities of the Council on Pharmacy and Chemistry of the American Medical Association, in addition to their laboratory facilities, in such matters as these. I may therefore, with all due respect, suggest that . . . it will pay you to eliminate my name from your mailing list.

The members of the Council on Pharmacy and Chemistry are working week in and week out without remuneration. Few appreciate how much these scientific men are doing for rational therapeutics; fewer still realize how much has been accomplished through their efforts, or how much more could be accomplished if every physician who at least believes in the work of the Council would give it his full support.

AWARD OF NOBEL PRIZES IN MEDICINE

The cable brings word that the Nobel prize in medicine for 1919 has been awarded to Prof. Jules Bordet of Brussels, and the 1920 prize to Prof. August Krogh of Copenhagen. Bordet's research on serology laid the foundation for the modern hemolysis tests of syphilis, the fixation or deviation of complement being his discovery. With Gengou he also discovered the bacillus in the sputum in whooping cough which may be the causative agent. Bordet was awarded the city of Paris prize of $600 at the International Medical Congress at Budapest in 1909. He is professor of bacteriology at the University of Brussels and director of the Pas-

teur Institute, and is now in this country. Dr. Krogh is professor of animal physiology at the University of Copenhagen. He was a pioneer in the study of the forces governing gas exchange in the lungs, carbon dioxid as a regulator in the organism, tonometric determination of dissolved gases, microscopic gas analysis, development of embryos at different temperatures, the composition and tension of the alveolar air, and other related physiologic problems. The previous recipients of the Nobel prize in medicine have been Behring, Ross, Finsen, Pawlow, Koch, Laveran, Kocher, Kossel, Gullstrand, Carrel, Richet and Bárány, and two prizes were divided between Ramón y Cajal and Golgi, and between Ehrlich and Metchnikoff. Carrel is the only resident of the western hemisphere to receive the prize in medicine to date. No award was made of the prize in medicine during 1915, 1916, 1917 and 1918. The prize has thus gone once to England, Russia, Italy, Spain, Switzerland, Sweden, America, Austria and Belgium, twice to Denmark, three times to France, and four times to Germany.

AN OPPORTUNITY FOR RETURN TO A HISTORICAL SOURCE

"In the thirteenth century," says Garrison, "the Collège de Saint Côme was organized at Paris, constituting a guild the members of which were divided into the clerical barber-surgeons or surgeons of the long robe, and the lay barbers or surgeons of the short robe, and in 1311, 1352 and 1364, royal decrees were issued forbidding the latter to practice surgery without being duly examined by the former. In 1372, Charles V decreed that the barbers should be allowed to treat wounds and not be interfered with by their long-robed confrères."

Now it is announced that in 1921 the barbers of Chicago will charge one dollar for a haircut and from thirty-five to fifty cents for a shave. This should make their net incomes average well beyond the income of the average physician. Why should not physicians and surgeons take up this delicate art? If the barbers were surgeons, let the surgeons be barbers. They might call the process "keratinectomy" or "hairostomy" or "pilectomy," the latter term possibly confusing the followers of "orificial surgery." As the proverb sayeth: "Turn about is fair play"; "What's sauce for the goose is soup for the gander," or words to that effect.

CHIROPRACTIC CANDOR

In Butte, Montana, recently there was a convention of "chiropractors." This august assembly was addressed by one of its shining lights—Mr. Palmer, of Davenport, Iowa, "the Fountain Head of Chiropractic." To the local newspapers Mr. Palmer explained:

"Our school back at Davenport is established on a business and not a professional basis," Mr. Palmer said. "It is a business where we manufacture chiropractors. They have got to work just like machinery. A course of salesmanship goes along with their training. We teach them the idea and then we show them how to sell it."

Commendably frank! They *do* work like machinery; from the eyebrows down. THE JOURNAL has always held that "chiropractic" is a trade and not a profession; Mr. Palmer's admission makes it unanimous.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Epidemic of Dengue.—Dengue fever, of which a number of cases were reported throughout the state, is completely under control since the advent of cool weather, according to an announcement of Dr. Samuel W. Welch, state health officer.

Quarantine Station Closed.—Announcement has been made by federal officials at Washington that the quarantine station near Fort Morgan will shortly be closed. All effects will be moved to Mobile, where the quarantine physicians will hereafter have their offices at the custom house.

ARKANSAS

New Health Associations Organized.—The Arkansas Public Health Association was incorporated, October 15, on application of Dr. Augustus C. Shipp, president; Mrs. T. S. Shannon, vice president, and Miss Erle Chambers, executive secretary. ——Pope County Public Health Association was organized, October 15, at Russellville, and the following officers were named: president, Rev. W. L. Hurie; vice presidents, Mrs. J. D. Ward and A. T. Stork; secretary, Mrs. L. B. McClure, and treasurer, A. N. Falls.

Prevalence of Trachoma.—During the last summer, in a trachoma survey carried on throughout Arkansas under the auspices of the U. S. Public Health Service, out of 1,451 persons examined in ten counties, 262 were found afflicted with trachoma. It is estimated that at least 40 per cent. of the blindness in the state is caused by trachoma. The greatest number of cases, 108 out of 746 examined, was found in Searcy County. No cases were discovered in Ashland County out of 313 subjects examined.

CALIFORNIA

Illegal Practitioner Convicted.—It is reported that A. C. Goscinsky, who for several years has practiced medicine and surgery in Monterey County, claiming that a certificate issued to him by the state board of medical examiners had been destroyed in the San Francisco fire of 1906, was convicted at Salinas recently on a charge of violation of the medical practice act in practicing without the possession of a certificate.

Results of California Referendum.—As THE JOURNAL goes to press a special telegram from California reports that the antivivisection measure has been overwhelmingly defeated; also, that the California State Medical Society and the League for the Conservation of Public Health have won decisively in the fight against the osteopaths. The vote on the antivaccination question and the proposed chiropractic bill is close. It is believed that both have been defeated.

DISTRICT OF COLUMBIA

Occupational Therapy Association Organized.—Delegates representing Walter Reed, Providence, Mount Alto and St. Elizabeth's hospitals, the Public Health Service and the Federal Board for Vocational Education met at the Walter Reed Hospital, October 12, and perfected the organization of the District of Columbia Association of Occupational Therapy. The following officers were elected: Col. James D. Glennan, M. C., U. S Army, honorary president; Major A. C. Monohan, Sanitary Corps, U. S. Army, president; Mrs. Helen Smith, vice president; Miss Tracy, recording secretary; Miss Elsie Taft, corresponding secretary, and Miss M. Morris, treasurer.

FLORIDA

Personal.—Dr. Charles M. Conkling, West Palm Beach, has been appointed city health officer to succeed Dr. Albert H. King, resigned.

Eclectic Board Member Removed.—According to a report, Dr. George A. Munch, formerly secretary of the Eclectic Board of Medical Examiners, has been removed by Governor Catts because he has failed to surrender the books, records

and files of the board to Dr. A. J. McDonald, who was recently elected to the secretaryship.

Medical Society Holds Annual Meeting.—At the meeting of the Florida Midland Medical Society, held at Orlando, October 13, the following officers were named for the ensuing year: president, Dr. Earl McRae, Tampa; vice presidents, Drs. Robert L. Cline, Arcadia, John C. Knight, Plant City, and Calvin D. Christ, Orlando, and secretary-treasurer, Dr. Rufus R. Kime, Orlando. Tampa was chosen as the meeting place of the next session of the society in April, 1921.

ILLINOIS

Chiropractors Convicted.—Lucius J. Love of Danville and Peter Walker of Chicago, chiropractors, were arrested by the Illinois Department of Registration and Education for practicing without licenses. They were given jury trials and a verdict of guilty was returned in the case of each. A second charge is pending against Walker.

Reserve Corps Division Organized.—At a meeting of reorganization held at the Aviation Club, Chicago, October 26, the Medical Reserve Corps of the U. S. Army, Illinois Division, elected the following officers: president, Col. Frank Billings; vice president, Col. Allen B. Kanavel; secretary-treasurer, Lieut. Harry T. Arkin; councilors, Lieut.-Cols. Frank W. Broderick, James A. Harvey, William L. Baum and Joseph Beck.

Chicago

Arrested for Practicing Without Licenses.—Yin Joe Lee, 327 West Twenty-Second Street, was arrested for practicing medicine without a license and fined $25 and costs.——Mrs. F. Zientarske, 2708 North Richmond Avenue, who poses as a nurse, was arrested for practicing medicine without a license and fined $25 and costs.

Gynecologic Society Offers Prize.—The Chicago Gynecological Society offers an annual prize of $100 for the best paper presented during the year. Nonmembers as well as members are eligible for the competition which will be limited to those authors who have announced their intention to compete. Those interested should communicate with the secretary, Dr. Joseph L. Baer, 104 South Michigan Avenue.

Polyclinic Hospital Drive.—A drive to raise a fund of $1,000,000 to make possible the establishment of a modern hospital and health center will be inaugurated by the Chicago Polyclinic and Hospital, November 8. Tentative plans contemplate the establishment of an institution with five general departments, an outpatient department and dispensary, hospital, educational department, training school for nurses, and social service department. The campaign will close November 20. Headquarters will be at the LaSalle Hotel.

IOWA

Personal.—Dr. Herman S. Major, formerly at the Fulton (Mo.) State Hospital, has been appointed assistant superintendent of the Iowa Hospital for the Insane, Independence.

Iowa Awarded Crusade Cup.—The loving cup offered by the National Tuberculosis Association to the state which showed the best results in the modern health crusade has been awarded to Iowa.

LOUISIANA

Society to Have Postgraduate Meeting.—The Louisiana State Medical Society is making arrangements for a postgraduate course to be held in connection with the next annual meeting.

Legislature Enacts Abortion Measure.—Two laws against abortion, submitted by a committee of the Orleans Parish and Louisiana state medical societies were unanimously passed by the Louisiana legislature. The first act prohibits the distributing or attempt to distribute the means for the procuring of abortions or premature deliveries, in the subjoined text.

Section 1. Be it enacted by the General Assembly of the State of Louisiana, That whoever shall, for the criminal purpose or with the intent of procuring a premature delivery or abortion, sell or lend or offer to sell or lend, or advise to use or in any way or form advertise or expose for sale either orally or in writing, or who shall, in any manner or form distribute any drug, potion or instrument or any other article or thing to any person, shall be guilty of a felony and on conviction shall be punished by imprisonment in the State Penitentiary for a term not exceeding two years.

Section 2. Be it further enacted, etc., that nothing in this Act shall be construed as amending or repealing Act. No. 24 of 1888 entitled "An Act to amend and re-enact Section 807 of the Revised Statutes of 1870, relative to attempt to procure premature delivery or abortion," or any part thereof.

The second act prohibits the printing or publishing of advertisements of means for the criminal procurement of abortion or miscarriage or prevention of conception, in these terms:

Section 1. Be it enacted by the General Assembly of the State of Louisiana, That whoever prints or publishes an advertisement of any secret drug or nostrum purporting to be for the exclusive use of females or which cautions females against their use when in a condition of pregnancy, or in any way publishes an account or description of any secret drug or nostrum purporting to be exclusively for the use of females, or for preventing conception or procuring abortion or miscarriage, shall be fined five hundred dollars ($500.00), and imprisoned for not less than ten days nor more than six months.

MARYLAND

Blind School Asks Funds.—The Maryland Workshop for the Blind has requested an increase of $3,000 in its municipal appropriation, now amounting to $5,000 a year, to supplement the state appropriation, which has been increased from $14,000 to $16,000. Among the 200 blind men and women cared for, 154 are from Baltimore.

Offer of Hospital to City Withdrawn.—Dr. C. Hampson Jones, health commissioner of Baltimore, has been notified that the U. S. Public Health Service has withdrawn its offer to the city of the Marine Hospital. The War Department has canceled the agreement under which the Public Health Service has been using the hospital buildings at Fort McHenry and the Public Health Service will again use the Marine Hospital after extensive improvements have been made.

Personal.—Dr. Jules Bordet, Herter lecturer at the Johns Hopkins University, and his Belgian associates were recently entertained at dinner at the Maryland Club by members of the faculties of the Johns Hopkins Medical School and the School of Hygiene and Public Health.——Dr. Henry B. Thomas, Baltimore, sustained a broken rib and cuts and bruises on the body when his automobile was struck by an express car of the Electric Railway Company, October 29.

MASSACHUSETTS

Surgical Association to Hold Meeting.—The first meeting of the Clinical and Surgical Association of Massachusetts will be held at the Boston City Club, November 9-11.

Personal.—Dr. Henry A. Christian, Hersey professor of the theory and practice of physic at the Harvard Medical School and physician-in-chief of the Peter Bent Brigham Hospital, Boston, has resumed his duties after a year's leave of absence in Washington, D. C., as chairman of the Division of Medical Sciences of the National Research Council.——Dr. Currier C. Weymouth, Midway, has been appointed associate medical examiner (coroner) of the seventh Norfolk district.——Dr. Charles E. Mackey, South Boston, has been appointed director of the city health educational service of Boston to succeed Dr. Robert B. Hunt, resigned.

MICHIGAN

Personal.—Dr. A. Joslin, Pontiac, has been appointed city sanitary inspector, to succeed Dr. Ralph A. Brady, resigned.——Dr. Willard L. Quennell, formerly with the Massachusetts State Infirmary, Tewkesbury, has been appointed superintendent of the Highland Park General Hospital.

Society Unveils War Memorial.—A memorial tablet, bearing 268 names of members of the Wayne County Medical Society who served during the World War, was unveiled at a special patriotic meeting of the society, October 18, at which Dr. James McMillan officiated as chairman. Dr. Harold Wilson, president of the society, accepted the tablet on behalf of the members.

MINNESOTA

County Health Association Organized.—At a meeting held at Arlington, October 7, the organization of Sibley County Public Health Association was completed and the following officers were elected: president, Miss Martha Beatty; vice presidents, Mrs. Peter Morton, Winthrop, and Mr. R. S. Peterson, Henderson; secretary, Mr. S. J. Maurer, Gaylord, and treasurer, Mr. C. F. Maurer, Arlington.

New County Health Journal.—The Hennepin County Public Health Association is publishing a new journal, known as the *Hennepin Commonhealth*, the first number of which appeared October 18. The journal will record the activities of the association and its constituent agencies, of the Minneapolis Health Department, of general hospitals, and allied activities. The offices of the associaton are in the Handicraft Building, Minneapolis.

MISSOURI

Personal.—Dr. Herman A. LaForce has been elected city physician of Carthage to succeed Dr. Warren B. Chapman, resigned.

Postgraduate Clinics.—Announcement is made that the St. Louis postgraduate clinics, originally scheduled for November 16-18, will be held November 23-24, under the auspices of the St. Louis Medical Society.

NEW JERSEY

Medical Society Elects Officers.—At the annual meeting of the Westfield Medical Society, October 5, Dr. Frederick A. Kinch was elected president, Dr. William W. Sisseron, vice president, and Dr. Murray E. Ramsey, secretary.

Academy Dedicates New Home.—The new home of the Academy of Medicine of Northern New Jersey, 91 Lincoln Park, Newark, was dedicated with appropriate exercises, October 20. The building contains an auditorium, council room, library and reading room, a museum of history and pathology and a collection of prints, paintings and pictures illustrating the history of medicine. The library and historical miscellany are the gifts of Dr. William S. Disbrow. The officers of the academy, whose membership totals 360, are Dr. John F. Hagerty, president; Dr. Emanuel D. Newman, secretary, and Dr. Henry J. Wallhauser, treasurer.

NEW YORK

Ontario Medical Society Meeting.—At the annual meeting of the Ontario Medical Society held at Canandaigua under the presidency of Dr. Daniel A. Eiseline, Shortsville, the following officers were elected: president, Dr. Henry C. Burgess, Rochester; vice president, Dr. Joseph A. Sanders, Clifton Springs, and secretary-treasurer, Dr. Daniel A. Eiseline, Shortsville.

Albany Medical College Scholarships.—The income from the fund given by the late Dr. Robert M. Fuller to Union College to establish scholarships in the Albany Medical College will be divided into ten scholarships. Five will be reserved for students who at the time of entering medical school received or were candidates for a bachelor's degree from Union College, and five will be awarded to students who have completed the two years' premedical course at Union College. Preference will be given to those who have excelled in the work of the department of chemistry.

New York City

Personal.—Dr. James F. McKernon has been elected president of the New York Post-Graduate Medical School and Hospital to succeed Dr. Frederic E. Sondern.

Beth Moses Hospital Dedicated.—The Beth Moses Hospital, a five-story structure, costing $400,000 and with a capacity of 165 beds, has been opened at Stuyvesant Avenue and Hart Street, Brooklyn.

Vanderbilt Memorial.—The Post-Graduate Hospital is the recipient of a gift of $100,000 from Mrs. Raymond T. Baker as a memorial to her former husband, the late Alfred G. Vanderbilt. This subscription, together with another of $1,000 from Mrs. Maud L. Smith, brings the total subscribed toward the $2,000,000 endowment fund of the Post-Graduate Hospital to $1,445,054.50.

Hospital for Washington Heights Section.—The Missionary Sisters of the Sacred Heart have acquired the property fronting on Edgecombe Avenue, between One Hundred and Sixty-Third and One Hundred and Sixty-Fourth streets, on which is located a small hospital conducted by the Sisters of St. Lawrence, for the erection of a modern hospital to be known as the Columbus Hospital. The new institution will serve the Washington Heights, Dyckman, Inwood and Kingsbridge sections.

NORTH CAROLINA

Personal.—Dr. Raymond V. Yokeley, health officer of Davidson County, who recently underwent a serious operation at High Point Hospital, Lexington, is reported to have recovered and to have returned to his home at Denton.

District Society Elects Officers.—At the annual meeting of the Ninth District Medical Society of North Carolina held in Mooresville, October 12, under the presidency of Dr. Henry C. Menzies, Hickory, Dr. Andrew E. Bell, Mooresville, was elected president, Dr. Harold H. Newman, Salisbury, secretary. The next annual meeting will be held at Salisbury, October, 1921.

NORTH DAKOTA

Dr. E. F. Ladd Becomes Senator.—At the election held, November 2, Prof. E. F. Ladd, Fargo, for many years president of the North Dakota Agricultural College and since 1902 state food commissioner, was elected United States Senator, succeeding Senator Gronna. Dr. Ladd may be remembered by many of the readers of THE JOURNAL as one of the effective workers for pure food and the elimination of fraudulent medicines. He was among the pioneer workers who did active and consistent work for this cause.

OHIO

Health Council in Cleveland.—Dr. Haven Emerson, New York, who recently completed the Cleveland health and hospital survey, has been appointed by the Welfare Federation of Cleveland to be director of a proposed health council whose function it will be to carry out some of the recommendations made in the survey report.

Hospital Appointments.—The following appointments have been announced to the staff of St. Alexis Hospital, Cleveland: Dr. John J. Thomas, chief of the maternity department; Dr. Theodore A. Willis, chief of the orthopedic clinic; Drs. Joseph R. Thompson, and Harold O. Ruh, to the pediatric department; Dr. Edgar P. McNamaree, chief of the roentgenray department; Dr. Richard Dexter, chief of the medical department, and Dr. Clyde L. Cummer, director of laboratories.

OKLAHOMA

State Health Association Meeting.—At the closing session of the Oklahoma State Health Conference, October 14, the Oklahoma Tuberculosis Association resolved to change its title to the Oklahoma Public Health Association, and the following officers were named for the ensuing year: president, J. F. Owens, Oklahoma City; president-emeritus, E. K. Gaylord, Oklahoma City; vice-presidents, Drs. Lewis J. Moorman, Oklahoma City, Tams Bixby, Muskogee, and O. H. McCarty, Tulsa; secretary, Jules Schevitz, Oklahoma City, and treasurer, J. Henry Johnson, Oklahoma City.

PENNSYLVANIA

Medicinal Preparations as Alcoholic Beverages.—Complaints of the promiscuous sale of Hoffman's anodyne and tincture of Jamaica ginger, and the death in York of a man supposedly from the effects of drinking anodyne, have led to a campaign by the bureau of drug control of the state department of health to search for evidence against persons selling or furnishing any medicinal preparation in a manner not in conformity with lawful medicinal uses.

Philadelphia

Philadelphia Masons' Hospital.—A memorial hospital is being erected by Philadelphia Masons at the Masonic Homes of the Grand Lodge of Pennsylvania, Elizabethtown, to be known as the Philadelphia Freemasons' Memorial Hospital. The hospital includes two wings, a central administrative building and two connecting corridors, and when completed will accommodate 124 patients.

Tuberculosis Clinics.—As part of its campaign against tuberculosis among industrial workers in this city, the Philadelphia Health Council and Tuberculosis Society will establish immediately night clinics in every important factory district. These clinics will be conducted under the direction of Dr. J. Blair Spencer.

Jefferson Acquires Gross Medal.—A gold medal, studded with diamonds, but valued chiefly because it had been "presented to Dr. S. D. Gross by his medical friends in commemoration of his fifty-first year in the profession, April 10, 1879," was recently given to Dr. J. Chalmers DaCosta, S. D. Gross professor of surgery at Jefferson Medical College, to be placed in the Jefferson College Museum. The medal was obtained by Dr. John Bertolet, Reading, from the descendants of Dr. Gross.

TEXAS

Personal.—Dr. Irvy L. McGlassen, San Antonio, has been appointed a member of the state board of medical examiners, succeeding Dr. Swayne, deceased.

Vaccination Ordinance on Ballot.—The city commissioner of Waco has fixed November 23 as the date for submitting to voters the ordinance providing for compulsory vaccination against smallpox as a condition for admission to the city schools.

CANADA

Personal.—Dr. Margaret O'Hara, Dhar, India, recently made a number of addresses in Montreal on missionary work in the Far East.——Dr. Roy McGibbon, Montreal, has returned from overseas.——Dr. J. A. Chabot, for more than ten years medical officer of health of Verdun, Quebec, has resigned.

Hudson Bay Research Fellowship.—The Hudson's Bay Company, in celebration of the two hundred and fiftieth anniversary of its foundation, recently founded at the University of Manitoba a fellowship of the annual value of $1,500 for the years 1920-1929, inclusive. The fellowship, to be known as the Hudson's Bay Company Research Fellowship, will be awarded annually and will be open to graduates of any Canadian university. It is tenable at the University of Manitoba and each fellow must devote his entire time to original research in some branch of pure or applied science, including the medical sciences. The first appointment will be made at an early date.

Women Physicians for India.—At a recent meeting of the Canadian auxiliary committee of the Women's Medical College at Ludhiana, India, at which Dr. Jennie Gray Wildman, Toronto, presided, Dr. Margaret Mackellar delivered an address on the great need of medical workess in India. The Women's Christian Medical College at Ludhiana in the course of twenty-five years has trained 335 women, now working in all parts of India and Arabia. The college is interdenominational and apart from grants from the government of India, is dependent on free will offerings. Dr. Gray was elected president of the auxiliary committee; Dr. Laura Hamilton, corresponding secretary; Dr. Mary Fotheringham, recording secretary; Dr. Margaret Patterson, treasurer.

GENERAL

General Ireland on Association Council.—Surg.-Gen. M. W. Ireland, U. S. Army, has been appointed a member of the Council on Medical Education of the American Medical Association to succeed the late Dr. Isador Dyer, New Orleans.

Southwestern Association to Hold Meeting.—The fifteenth annual meeting of the Southwestern Medical Association, comprising the states of Missouri, Kansas, Oklahoma, Arkansas and Texas, will be held at Wichita, Kan., November 22-24, under the presidency of Dr. Ernest F. Day, Arkansas City, Kan.

American Delegates to the Pan-American Sanitary Conference.—The U. S. Public Health Service announces that the American delegates to the Sixth International Sanitary Conference of the American Republics, to be held at Montevideo, Dec. 6-11, 1920, will be Asst. Surg.-Gen. J. H. White and Senior Surgeon G. M. Guiteras, both of whom are familiar with Pan-American public health problems, especially as regards tropical countries.

Woman Physician Receives Honors.—Dr. Blanche Norton has been awarded the Cross of King George I by the Greek government in recognition of her work for victims of trachoma in Greece. For the last year, Dr. Norton has been engaged in trachoma eradication work in Trebizond and Constantinople under the auspices of the Near East Relief. In the course of her service Dr. Norton contracted the disease herself and although not fully recovered, she has returned to the United States.

Military Roentgenologists Organize.—At the annual meeting of the American Roentgen-Ray Society at Minneapolis, the American Association of Military Roentgenologists was organized and the following officers were elected: Dr. Arthur C. Christie, Washington, D. C., president; Dr. Henry K. Pancoast, Philadelphia, vice president, and Dr. Francis F. Borzell, Philadelphia, secretary. Officers of the Medical Corps and Sanitary Corps who were actively engaged in roentgen-ray work during the World War are eligible to membership.

American Journal of Obstetrics and Gynecology.—The first issue of this journal has just appeared from the press of the C. V. Mosby Company, St. Louis. It succeeds the former *American Journal of Obstetrics and Diseases of Children* and represents the American Gynecological Society, the American Association of Obstetricians and Gynecologists and the obstetric societies of New York, Philadelphia and Brooklyn. It is edited by Dr. George W. Kosmak, New York, and Dr. Hugo Ehrenfest, St. Louis. There is also an editorial board of thirty-three, whose names appear on the front cover. The first issue is largely devoted to papers read at the last session of the American Gynecological Society, together with the discussions, a collective review and some selected abstracts. The journal makes a good appearance and should well fill the special need for which it was created.

LATIN AMERICA

New Health Laws in Venezuela.—New laws have been adopted by the government of Venezuela relative to public health organization, practice of pharmacy and the importation and sale of opium and other narcotic drugs.

Monument to Dr. Núñez.—It is stated from Havana that the monument to Dr. Enrique Núñez, former secretary of sanitation, will shortly be unveiled. The monument will be located in front of the Hospital Calixto Garcia, an institution which owes its existence to Dr. Núñez' efforts. In the frieze of the statue will be illustrated several phases of Dr. Núñez' life work, such as his patriotic services, his surgical accomplishments and his infant welfare work.

Personal.—Drs. R. Rebagliati and A. Flores have been appointed professors of bacteriology and otorhinolaryngology, respectively, at the University of Lima, Peru.——Dr. J. L. Tamayo of Guayaquil has been elected president of the republic of Ecuador for a four year term.——Dr. C. E. Paz Soldan, founder and editor of the *Reforma médica* of Lima, has been appointed to the chair of hygiene in the medical faculty.——Dr. V. Gioliéo, the director of the S. Paulo biology laboratory, is traveling in Europe.——Dr. J. C. Navarro of Buenos Aires is in Paris as the delegate of the Liga Argentina contra la tuberculosis to the international conference on tuberculosis held there late in October.

FOREIGN

Retirement of Salomonsen.—Prof. C. J. Salomonsen has retired from the chair of pathology and bacteriology at the University of Copenhagen after thirty-seven years of service. He is now 73.

Next French Medical Congress.—The Fifteenth Congrès français de Médecine is announced to be convened at Strasbourg in 1921, with Professor Bard in the chair. The addresses are to be on the anatomic and functional adaptation of the heart to pathologic conditions in the circulation; on glycemia, and on antianaphylaxis.

Bucharest Honors French Physician.—The city of Bucharest has changed the name of one of its streets in honor of Dr. J. Clunet, who devoted himself for years to fighting epidemics in Roumania, especially at Jassy where he has been instrumental in getting a hospital founded, almost building it with his own hands. It is there that he was buried.

A Council on Pharmacy and Chemistry for the Netherlands.—The minister of labor of the Netherlands officially inaugurated, September 1, the government Instituut voor Pharmacotherapeutisch Onderzoek, which seems to be modeled after the Council on Pharmacy and Chemistry of the American Medical Association. The minister of labor remarked in his opening address that the Netherlands has had a permanent pharmacopeia commission since 1899. But this does not attempt to keep pace with the flood of new remedies, and the government has finally heeded the appeals of the Netherlands Medical Association and the Pharmaceutical Association and founded this institute, mainly in the interests of the sick and suffering, but also in the interests of physicians, pharmacists, and others, including manufacturing chemists when they succeed in adding to the treasure of useful drugs. The president of the institute, Prof. L. van Itallie, expressed the appreciation of the organized physicians and pharmacists for the government's initiative, and described the attempts that have been made in other countries in this line, citing the success of the American Medical Association with its Council on Pharmacy and Chemistry. "The reports published by this Council give much valuable information which certainly should be appreciated by all concerned." He added, "England is also beginning to realize the necessity for supervision of new remedies. The British minister of health appointed a commission a few months ago to study ways and means for legislative and administrative measures to allow control of the quality and the identity of such remedies as cannot conveniently be investigated by chemical tests." He told of the efforts in this line in Germany, saying "As long as twenty years ago at one of the Naturforscher Congresses the question of physicians' writing testimonials for newly discovered remedies was discussed. It was an attempt to regulate the relations between the manufacturing chemists, pharmacologic institutes and physicians. Laudatory articles written heedlessly, without adequate basis for the statements, had led to great disappointments in administering the drugs thus

endorsed. Medical articles designed for scientific journals were being republished for advertising purposes in illustrated weeklies and the dailies to cultivate a demand for the new remedies and new artificial foods on the part of the public. But the discussion at the congress although introduced by leading men was of little practical benefit. The opposition from part of the manufacturing chemists soon led to the dropping of the matter. Not much better success was realized by the commission appointed in 1912 by the Congress for Internal Medicine. This commission was appointed for the purpose of ascertaining whether the claims made for the new drugs were exaggerated, intentionally misleading or untrue. The publication of the commission's reports set a few pens in motion, but the manufacturing chemists took up the cudgel against the medical journals that aided the commission. They withdrew their advertising from the journals guilty of such audacity. There was no adequate support, either, on the part of physicians. Better success was realized in the United States. . . ." "The Netherlands is the only country which has inaugurated a government institution for the purpose. The fact that it is a state institution is a guarantee that the council in charge will have the support of the government."

[NOTE.—Judging from this report, the Council on Pharmacy and Chemistry of the Netherlands is to have the support and the backing of the government. The Council on Pharmacy and Chemistry of the American Medical Association has only the backing of the medical profession.—ED.]

CORRECTION

Potassium Permanganate Solution, 1:5,000, Not 1 Per Cent.—In the discussion of the paper of Dr. Richard L. Sutton on "Infectious Eczematoid Dermatitis," THE JOURNAL, October 9, page 979, Dr. Harold N. Cole is quoted as advising the use of a 1 per cent. aqueous solution of potassium permanganate, four or five times a day, for the treatment of this disease. Dr. Cole calls our attention to the fact that this should read, 1:5,000, as a 1 per cent. solution of potassium permanganate would give rise to a severe dermatitis.

Government Services

Transfer of Hoff General Hospital

The U. S. Public Health Service has taken over the Hoff General Hospital and U. S. Debarkation Hospital at Fox Hills, Staten Island, N. Y. It will be continued as a general hospital with a capacity of 500 beds. Dr. J. O. Cobb, recently in charge of Public Health Service activities in Chicago, will be in charge.

Public Health Service Examinations

A board of commissioned officers of the U. S. Public Health Service has been convened in Washington for the purpose of examining officers to determine their fitness for promotion and to examine applicants for appointment as assistant surgeons. The board is composed of Senior Surgeon G. M. Magruder, chairman, Surgeon Edward Francis, and Surgeon A. M. Stimson, recorder.

Purchase of Medical Supplies

The purchase of all technical supplies for the Medical Corps of the Army has reverted back into the hands of the Surgeon-General's Office, according to an announcement made by the War Department. During the war, and since, all supplies for the Army, including the Medical Corps equipment, were obtained through the Purchase, Storage and Traffic Bureau under the jurisdiction of the General Staff.

Examinations for Army Commissions

More than 300 emergency officers appeared for examination for commissions in the Medical Corps of the Army at various camps throughout the country, October 25. During the next few weeks the papers will be graded and recommendations will be made for the issuance of commissions to the successful candidates. These recommendations will then go before a higher board composed of eight general officers in session at Washington of which Surgeon-General Ireland is a member.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 16, 1920.

Silica as a Cause of Printers' Phthisis

In a letter to the *Times*, Mr. E. Halford Ross brings forward a new theory as to the causation of printers' phthisis. Early in 1918 he reported to the health committee of the joint industrial council of the printing trades that there was a concentration of hereditary predisposition to consumption in compositors owing to the "closeness" of their craft and to intermarriage within their families. About a year ago his suspicions fell on printers' list as a cause. It is a black, grumous, woolly, fluffy substance that collects in compositors' boxes, trays, cases and chases. It had already been examined by bacteriologists for the tubercle bacillus but found to be sterile. This was a peculiar fact and encouraged Mr. Ross to make a further examination. He then found that the list does not readily decompose like the dirt collected in rulers', readers' and binders' rooms, which soon becomes musty and smells. Then he remarked its weight and realized that there was no object in looking for the tubercle bacillus in it, for the bacillus was already latent in the human subject. A chemical analysis was carried out. Samples of list were obtained from various works and sent unlabeled to chemists. They reported that the list from composing rooms contained both silica and iron in appreciable quantities; the list from machine rooms contained less. It is known that silica and the oxids of iron light up phthisis when inhaled continually by those predisposed to the disease. The condition of the lung produced by silica, which predisposes to phthisis, has been described as silicosis. One of the great printing firms of London has for some time used suction bellows on compositors' trays, cases and chases to remove the list.

Serious Financial Position of the Hospitals

The financial position of the London hospitals is described in a report just issued by the committee of King Edward's Hospital Fund as alarming. The expenditure of 109 institutions, providing a total of 9,988 beds in average daily occupation during the year 1919, is reviewed. The chief features are a continued rise in wages and salaries, and the cessation of the treatment of military and naval patients (for whom the government pays). The total expenditure of these hospitals for maintenance, administration, rates and taxes, but excluding capital expenditure, interest on borrowed money and contributions to the maintenance of convalescent homes and country branches, amounted to $10,500,000. In 1913, the last year before the war, the expenditure was only $5,700,000.

Intellectual Reconciliation with Germany

The subjoined letter, signed by a large number of professors and doctors of Oxford University, has been sent:

To the Professors of the Arts and Sciences and to the Members of the Universities and Learned Societies in Germany and Austria:—Since there will be many of you who fully share our heartfelt sorrow and regret for the breach that the war has occasioned in our friendly intercourse, and since you cannot doubt the sincerity of the feeling which engendered and cherished that old friendliness, you must, we believe, be sharing our hope for its speedy reestablishment. We therefore, the undersigned doctors, heads of houses, professors and other officers and teachers in the University of Oxford now personally approach you with the desire to dispel the embitterment of animosities that under the impulse of loyal patriotism may have passed between us. In the field where our aims are one, our enthusiasms the same, our rivalry and ambition generous, we can surely look to be reconciled, and the fellowship of learning offers a road which may, and, if our spiritual ideals be alive, must lead to a wider sympathy and better understanding between our kindred nations. While political dissensions are threatening to extinguish the honorable comity of the great European states, we pray that we may help to hasten that amicable reunion which civilization demands. *Impetret ratio quod dies impetratura est.*

This appeal is severely criticized by the *Times*, which says that its tone will shock the feelings of many in all classes of the British people. "Their attitude throughout the war was wonderfully free, in the face of unparalleled provocation, from hatred and vindictiveness, and they recognized to the full the catholic nature of art and literature. But they do not forget, as these professors seem ready to do, the unjust and wicked war forced upon them, which has swept away a whole generation of their youth, and to which the political dissensions threatening Europe mourned over by the signatories are directly due. The 'fellowship of learning' is very fine, and forgiveness to the truly repentant wrongdoer is a lofty spiritual ideal and a Christian duty. But justice is the first of human virtues, and justice demands that there shall be no pardon, to say nothing of 'amicable reunion' and the restoration of 'former friendliness' until the offender publicly confess their guilt, exhibit heartfelt sorrow for their crimes, and make the utmost satisfaction in their power. Only then will it be time to admit them into 'the honorable comity of European states.' The signatories seem ready not merely to forget the war and the German crimes in the war, but to imply that these crimes were committed under the impulse of loyal patriotism, such as inflamed our own people. They make no distinction between 'the embitterment of animosities' rightly kindled by the deliberate sinking of our hospital ships or the bombing of our open cities and the black passions of the wretches who perpetrated these enormities. Are the Oxford professors so ignorant of modern German thought as not to know that these passions were systematically fostered and propagated by the professorentum and learned societies of Germany for generations before the war? Have they no recollection of the manifesto signed by no less than ninety-three representatives of German science and art? Many of the greatest names in Germany in theology, natural science, law, history and philosophy were appended to that blank repudiation of German guilt, that whole-hearted defense of the violation of Belgium and all the murders done there, that frank confession that 'it is for the protection of kultur and out of kultur, that militarism has arisen.'"

Moral Objections Against Propaganda for the Prevention of Venereal Disease

In Manchester, protests have been made to the city council by certain religious associations against some features of the scheme for the prevention of venereal disease, and especially against the official poster. The health officer, Dr. J. Niven, at the invitation of the health committee has prepared a reply. He lays stress on the point that the Royal Commission on Venereal Diseases adopted the principle that these diseases should be treated on the same lines as other infectious diseases. It follows that the public should be freely canvassed as to the dangers, modes of prevention and means of cure. He points out that moral suasion has been abundantly tried in the army, and yet there has been a great extension of venereal disease. The class which is not affected by moral teaching has to be reached if venereal disease is to be materially reduced. Many men, for various reasons, will not go to treatment centers; therefore it was necessary to consider how they could be protected. Some of the objections raised are thus met by Dr. Niven: Objection 1. The poster does not sufficiently emphasize the need for purity of life. Reply: Perhaps this is because purity of life does not always protect against venereal disease. Objection 2. The poster is an encouragement to vice, assuming, as it does, that sexual indulgence is a thing of little moment. Reply: One would have thought the reverse, as it reminds the public that promiscuous intercourse is fraught with danger, a fact which only too readily slips from the mind of the young. But it is considered that the safety which may be obtained by following certain directions removes a deterrent to vice. This is more than doubtful. The mere fact that certain steps must be taken in a definitely prescribed manner acts rather as a check than otherwise, and only those bent on giving rein to their passions will take the necessary trouble. The deadly thing is the inertia which prevails with regard to venereal disease. This is shown by the fact that only two men a day apply at the public health office for a copy of the directions. Objection 3. It is contended that measures of personal disinfection are futile. Reply: At certain periods during the war the adoption of personal precautions reduced the incidence of venereal disease to small dimensions, when the necessary means were supplied and thorough instruction was given.

The Physician's Right to Strike

In a previous letter, a threatened strike of physicians against coal miners—a class which of late has repeatedly held the community in ransom by threatening to strike—was described. "The Right to Strike," a play by Ernest Hutchinson, dealing with the question, is now running. The staff of a small railway line giving sole access to a town decides to strike in order to enforce its terms. Medical supplies being held up, the staff of the local hospital counters by a motor transport service. On the first day of the strike a car is upset by a steel wire placed across the road, and a young physician, newly married, is killed. The medical strike then becomes as complete as the railway strike, and medical help is denied to the strikers and their families. The wife of a signalman has an obstructed labor. A physician, a friend of the one killed, is sought. He hesitates for some time; but, the railway strike being over, he is persuaded by his friend's widow to save the woman. The play has attracted much attention in the medical profession. A daily paper organized a matinée to which it invited about 300 physicians and a number of members of Parliament and trade unionists. So great was the demand for seats that the gallery and pit contained almost as many physicians as the stalls. The audience was very demonstrative. During the performance, ballot papers bearing the question, "Are physicians justified in starting a reprisal strike?" were distributed to the audience. The result was a majority of 16 per cent. in favor of the reprisal strike.

MADRID

(From Our Regular Correspondent)

Oct. 4, 1920.

Medical Week at Santander

The sanitary authorities have considered it their duty to extend their work by a campaign of propaganda, especially needed in this country, where sanitation does not exert in public life the influence it ought to. The public health officials selected the city of Santander at the time when the summer tourists were there in greatest numbers and when the royal family was spending a few days in the town. The public success had been taken for granted. The Santander physicians unfortunately did not participate fully in the medical week. The medical side, however, was much to the fore, as the lectures were prepared for physicians and not for the general public that filled the theater where the sessions were held. But the king surmounted all the misgivings with an address which, listened to respectfully at the beginning, created so much enthusiasm later that, contrary to the custom when the king speaks, wave followed wave of applause, and the king ended amid thundering cheers. His participation endowed the medical week with an importance never dreamed of by its organizers. In his address, the king, after greeting the medical society of Santander, emphasized the importance of this meeting, which would show the world after the war that Spain possesses a medical corps competent to improve Spanish health conditions. He called attention to the transformation that has been brought about in science

since 1914. Thus, we find chemists searching for the most effective agents of destruction, and at the same time permitting medicine to employ its inhuman discoveries for the benefit of mankind. On the other hand, it furnishes products and instruments for slaughter and, on the other, physicians study the way of nullifying these discoveries and even employing to restore health what was designed for the very purpose of destroying health and life. He advised physicians to go back to the laboratories and clinics and to work again for the welfare of humanity. He emphasized the important social rôle of the physician, to whom people used to resort only in case of sickness, while nowadays he is in constant demand in everyday life. The three chief subjects comprised by social medicine are natality, morbidity and mortality. He praised the holding of "medical" or "health" weeks that educate the public in the importance of public health and the duty of every citizen to do his share in increasing births and decreasing morbidity and mortality. The number of births in Spain should constitute at this moment a matter of public concern; for, while in 1906 the birth rate of Spain was exceeded only by that of Russia and equaled only by the birth rates of Germany, Austria and Italy, being 38 per thousand, this rate has now decreased to 33 per thousand. So we have lost 5 per thousand in a period of fourteen years. Going still further into this subject, the king said that according to the Instituto Geográfico and Estadistico (March report), the birth rate in Spain is lower than the death rate. There are some towns, as Santa Cruz de Tenerife, where the number of deaths are 10 per thousand more than the number of births. Madrid, with a birth rate of 27 per thousand, has a death rate of 26 per thousand. This cannot continue, as it will require only an epidemic of malaria, influenza or even a cold breeze from the mountains which may cause more pneumonia than usual to place mortality ahead of natality. He recognized that human selfishness, from which women were not exempt, made people try to live more comfortably by having fewer children or none at all, but he hoped that eventually this condition would be corrected and that citizens, while understanding their rights, would also fulfil their duties. So far as mortality is concerned, tuberculosis is a prominent factor. Therefore he did not consider too excessive any sanitary means that might be employed to combat it. He thought there were also in Spain other diseases that should be combated energetically, for instance, malaria, which has spread so extensively of late that now it may be said that it prevails throughout the forty-nine Spanish provinces. The government is at present studying measures to combat it, and the king stated that he had requested the minister of the interior not only to attend the medical week as a witness but also to discuss with the king the first steps that should be taken in the campaign against malaria. The king expressed his desire to have the medical profession take the leadership in making the people understand their duty of having more children so that Spain might be at the head of the world in this respect. Finally, he appealed to the women present to assist in passage and enforcement of laws for child welfare—a work that can be done only by women. He turned then to the physicians in the audience, reminding them that while he knew they were always ready to sacrifice their lives, this was not sufficient, for what was really needed was a daily sacrifice without the glamour of death. "It has been stated recently that Spanish physicians would go on a strike, abandoning their patients. This is an insult, for Spanish physicians will not do such a thing." (Great applause.) "Your diploma represents rather than a means of making a living a priesthood of service which you have never deserted." (Applause.) "I hope therefore that all of you will fulfil your duty and show the world our worth by means of better statistics than those of any other country." The king's speech was impromptu.

BELGIUM

(From Our Regular Correspondent)

Oct. 1, 1920.

Congress of Physiotherapy

Physical agents are gradually assuming more importance in modern therapeutics, the more so as the war developed newer indications and extended the old indications for physiotherapy. It is not surprising, then, that the first meeting of physiotherapeutic specialists since the war, held at Antwerp, September 11-12, should have been a marked success.

DISORDERS OF GROWTH

Dr. Kouindjy presented an extensive study on the disorders of growth and their treatment by physical agents and therapeutic work and exercises. The disorders of growth represent a class of affections which demand attentive surveillance, for even slight neglect may lead to grave consequences. Besides surgical intervention for osteitis and osteomyelitis and the measures employed for combating certain special affections during the growing period, the methods of treatment may be classified in two groups: hygienic measures and prophylactic measures. The first group comprises fresh air, light, rational dietetics and rest; the second includes especially methodical gymnastics and therapeutic work and exercises. Regulated work and exercises bring the psychomotor centers of the child into play, and make possible the maximum of movements with the minimum of effort. Since the hygienic and prophylactic measures form the bases of physical education, it is logical to assert that these, if rationally applied, constitute the whole of the treatment of the diseases of growth.

ABUSE OF MECHANOTHERAPY

It is perhaps the abuse of mechanotherapy which has done the greatest injury to the cause of physiotherapy; in fact, in late years many mishaps have been charged to this method of therapy. Dr. Guermonprez has made a special study of the contraindications to mechanotherapy in myotenositis, and he suggests that it should be avoided in all cases accompanied by a lesion of the muscle, especially at the beginning of treatment. Premature application of mechanical movement might cause an irritation of the muscle fibers and induce myositis and sclerotic processes in the muscles. The regrettable accidents of mechanotherapy should be attributed to the fact that this kinetic agent for a long time was limited to the empirics. Well directed and properly applied by an experienced physiotherapist, mechanotherapy yields excellent results. While it is true that early forcible mobilization and functional reeducation by graduated work and exercise can advantageously replace mechanotherapy, nevertheless the latter is amply justified and indicated in the treatment of stiff and ankylosed joints.

THE SPIROMETER

The rationale of the use of the spirometer was outlined in an interesting paper by Professor Spehl of Brussels. The majority of kinesitherapists are of opinion that the spirometric determination of the respiratory capacity is not sufficient: the inspired air should also be measured. Inspiration is a function of respiration just as much as is expiration. To get an exact knowledge of the respiratory capacity we must be content with chest measurements, for, imperfect as this method may be, no more precise means of measuring the inspired air has yet been found. The method does give an approximate idea of the quantity of air inspired. The relation betwen the two figures, that derived from the spirometric determinations for expiration and from the chest measurements of inspiration, permit the plotting of curves by which we can make a rational study of the respiratory capacity of each person.

TEACHING OF PHYSIOTHERAPY

Up to the present time, according to the reports of Drs. K. Lynens (for Belgium), Guilleminot (for France) and Stanley Melville (for England), there is nowhere organized instruction in physiotherapy. With few exceptions, as at the University of Ghent and the University of Madrid, where chairs of electrotherapy have lately been established, and on the rare occasions when some physiotherapists hold a professional meeting, the teaching of physiotherapy is conspicuous by its absence. The congress therefore passed a resolution favoring the institution in every school of medicine of a practical obligatory course of training in physiotherapy and radiology.

THE NEXT CONGRESS

It was decided that the fifth International Congress of Physiotherapy, to have been held in Petrograd, will meet in Madrid in 1922, and Dr. Bartrena Costa, the newly appointed titulary to the chair of physiotherapy at the University of Madrid, has been appointed chairman of the committee on organization.

BERLIN

(From Our Regular Correspondent)

Oct. 9, 1920.

The Right of Putting Incurable Patients Out of the Way

Again and again, the demand has been made by the laity that physicians be given the right to shorten the life of incurable patients, either at the request of the patients themselves or on demand of their relatives or friends, and thus save the patients weeks of useless pain and suffering. Two prominent men in this country have recently supported the idea; namely, the eminent Leipzig jurist, the late Professor Binding, and the Freiburg neurologist, Professor Hoche. They are the co-authors of a book entitled "Die Freigabe der Vernichtung lebensunwerten Lebens" (The Destruction of Useless Human Lives), in which they take the standpoint that to shorten the sufferings of patients who are irretrievably doomed to die is justifiable on humane, ethical, medical and juridical grounds. Binding divides into two main groups those to whom he considers this principle applicable: (1) those who on account of illness or injury cannot possibly recover, and who, in full knowledge of their condition, long to be relieved of their sufferings and have given distinct expression to such desire, and (2) the incurable insane, irrespective as to whether the mental disease is of congenital origin or otherwise. Binding can discover no reason, from a legal, social, moral or religious standpoint, why the incurable insane, who are a terrible caricature of true human beings and awaken horror in almost every one who sees them, should not be put to death. Furthermore, he thinks that friends, relatives or guardians who have the care of these patients and whose lives are made a burden by their continued existence should have the right to petition the authorities that such drastic action be taken.

In a middle group he puts all mentally sound persons who, owing to any event, for example, the infliction of an unequivocally mortal wound, have lost consciousness, and who, if they should regain consciousness, would only awaken to indescribable pain and misery. The according of permission to put sufferers out of their misery could be vested in the state authorities, or the matter could be left to the judgment of the attending physician, who would be in a position to know whether or not the indications for such intervention were present. Binding admits the possibility of errors arising in the according of such permission by state authorities, and also if the attending physician were granted the right to act on his own judgment; but he believes that "what is good and reasonable should prevail in spite of the risk of error." Under the conditions as they exist, he thinks that sympathy goes beyond all rightful bounds and thus becomes cruelty. Not to grant to incurables who long for death the desired relief that an easy death would bring is not based on true sympathy, but rather the opposite. The neurologist, Professor Hoche, states that friends and relatives in cases of incurable disease or incurable mental conditions not infrequently express the wish that "it might soon be over," and, in the case of patients who are suffering and who are near death, physicians are sometimes requested to do nothing to prolong life. The medical code of ethics puts the physician under obligations to preserve life and prolong it as far as possible. Exceptions to these principles we have in certain obstetric cases in which the physician is compelled to interrupt a pregnancy or to sacrifice a living child in order to save the mother. In line with Binding's view that, owing to a false system of ethics, the state goes to extremes in its endeavor to preserve unconditionally useless human lives, Hoche does not regard putting the incurable insane out of the way as an immoral deed but rather as an advisable and useful act.

Dr. Ebermayer, one of our most eminent criminal judges and a member of the Reichsgericht, writing in the *Deutsche medizinische Wochenschrift*, raises serious objections to the foregoing views. He emphasizes, in the same manner as former writers and speakers on the subject, that the establishment of the incurability of a disease or the absolutely fatal character of a given illness is often not possible beyond reasonable doubt. He says that Binding's proposal that a special board be appointed to consider whether or not the indications for drastic action were present awakens grave doubts. Putting the incurable insane out of the way seems to him even more questionable. In the case of such patients as seriously desire death on account of incurable disease, the fact that the one concerned desires death helps to overcome any possible scruples. But the incurable insane are powerless to express their intelligent will in the matter, so that if they were to be put out of the way it would be a case of a third party pronouncing a death sentence on a person whose judgment could not be heard. From a legal standpoint, such a view could not be entertained, especially since, in such cases, it would be more difficult than in the others to guard against abuse. Our sense of justice revolts at the thought of allowing the destruction of useless human lives to go to such lengths as Binding and Hoche propose.

Demand of the Independent Social Democrats that the Penalties for Abortion be Removed

A certain inward relation exists between the demands of Binding and Hoche, on the one hand, and the bill proposed in the reichstag by the independent social democrats that the paragraphs of the Penal Code be annulled which impose penalties on any one who brings about the death of a living embryo or fetus. As the law reads at present, an expectant mother who commits abortion on herself becomes liable to a jail sentence of at least six months (if there are mitigating circumstances) or otherwise of a penitentiary sentence up to five years. The same punishment awaits any one who brings about an abortion in a woman with her consent. If the abortion is performed without the knowledge and consent of the woman, a penitentiary sentence of at least two years is imposed on the perpetrator. If the death of the woman occurs, a penitentiary sentence ranging from ten years to life is provided. That the independent social democrats should demand the annulment of these provisions grows out of the position they take toward the rights of the individual in relation to the rights of the state. They consider the rights of the individual as above the rights of society and the state, but there is no doubt that all the other parties in the reichstag will oppose the bill.

Marriages

CHARLES FREDERICK RATHGEBER to Miss Helene Elizabeth Menzel, both of East Orange, N. J., October 23.

JOSEPH ROSCOE LATHAM, Casper, Wyo., to Miss Marjorie Janet Morey of Racine, Wis., October 11.

LOUIS PRESCHEL, New York, to Miss Mary B. Leisten of Newark, N. J., October 23.

HAROLD ALFRED RAMSER to Miss Mildred E. Jackson, both of Chicago, October 16.

ANTHONY CHARLES SAELI to Miss Johanna Crimi, both of Brooklyn, October 23.

Deaths

Alonso Potter Williamson, Santa Monica, Calif.; Hahnemann Medical College and Hospital, Philadelphia, 1876; aged 66; a specialist in neurology; a member of the Philadelphia Psychiatric Society; at one time superintendent of the New York State Hospital for the Insane, Pennsylvania State Asylum at Philadelphia, and of the State Asylum for the Insane at Minneapolis, and for four years connected with the Southern California State Hospital at Patton; died suddenly, October 21, from heart disease.

Harry Edward Sears ● Beverly, Mass.; Harvard University Medical School, 1896; aged 50; who served as assistant surgeon, U. S. Army, in Porto Rico during the Spanish-American war, and as Lieutenant-Colonel, M. C., U. S. Army, during the World War, receiving his discharge, May 26, 1919; at one time secretary of the Essex South District Medical Society; was found dead, October 19, from a gunshot wound of the heart, self-inflicted, it is believed, while despondent on account of ill health.

Theodore Mead, Washington, D. C.; Georgetown University School of Medicine, Washington, 1869; aged 83; a member of the Medical Society of the District of Columbia; at one time inspector in the Health Department of Washington; for many years medical examiner in the U. S. Bureau of Pensions; died, October 16.

Ferdinand Taylor Stires, Columbus, Neb.; University of Pennsylvania, Philadelphia, 1908; aged 38; a member of the Medical Society of the State of Pennsylvania; at one time resident physician at Moses Taylor Hospital, Scranton; died, September 28, from acute dilatation of the heart.

Henry Bullwinkel, Brooklyn, N. Y.; Bellevue Hospital Medical College, 1888; aged 54; at one time assistant sanitary inspector of the Brooklyn Board of Health, and in 1891 superintendent of the Hospital for Contagious Diseases, Brooklyn; died, September 14, from nephritis.

James Aloysius O'Reilly ● Middletown, N. Y.; College of Physicians and Surgeons in the City of New York, 1912; aged 33; Lieutenant, M. C., U. S. Army, resigned Nov. 19, 1918, on account of ill health; visiting physician to the Brooklyn Hospital; died, October 20.

William Harold Stutsman, Chicago; Rush Medical College, 1915; aged 34; a member of the Illinois State Medical Society; Captain, M. C., U. S. Army, and discharged, June 13, 1919; died in Seattle, Wash., September 22.

Robert I. Hicks, Warrenton, Va.; University of Pennsylvania, Philadelphia, 1855; aged 86; a member of the Medical Society of Virginia; died in the Garfield Memorial Hospital, Washington, D. C., October 16.

Baruch Israeli, Washington, D. C.; Georgetown University School of Medicine, Washington, 1897; for many years an employee of the Surgeon General's Library; died suddenly, October 16, from heart disease.

Herman John Halvorsen ● Chicago; Chicago College of Medicine and Surgery, 1912; aged 33; Lieutenant, M. C., U. S. Army, and discharged Jan. 4, 1919; died, October 21, from acute endocarditis.

Charles Thaddeus Love, Alamo, Tenn.; Vanderbilt University, Nashville, Tenn., 1894; aged 61; a member of the Tennessee State Medical Association; died in a hospital in Nashville, October 3.

● Indicates "Fellow" of the American Medical Association.

Charles Harrison Gardner, Philadelphia; Bellevue Hospital Medical College, 1868; aged 82; assistant surgeon, First Pennsylvania Cavalry, during the Civil War; died, October 19, from pneumonia.

Warren Fletcher Sherman, Lyons, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1866; aged 83; died, September 27, from injuries received in an automobile accident, September 23.

Elijah C. Dimmitt, Germantown, Ky.; University of Pennsylvania, Philadelphia, 1857; aged 85; for several years a member of the state board of health; died suddenly, October 15.

R. C. Matheson, Madison, N. C.; College of Physicians and Surgeons, Baltimore, 1891; aged 52; a member of the Medical Society of the State of North Carolina; died, October 15.

Charles C. Miller, Marengo, Ill.; University of Michigan, Ann Arbor, 1856; aged 89; a well-known apiarist, editor, and author of several books on bee culture; died about September 7.

Mary M. Cronemiller, Sacramento, Calif.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 59; died at the home of her brother in Los Angeles, October 12.

Robert L. Miller, Wichita Falls, Texas; St. Louis College of Physicians and Surgeons, 1895; aged 52; a member of the State Medical Association of Texas; died, October 20.

Charles Ives, Pecatonica, Ill.; Chicago Medical College, 1888; aged 58; a member of the Illinois State Medical Society; died, October 11, from cerebral hemorrhage.

Jerome Bland, Bucyrus, Ohio; Starling Medical College, Columbus, 1869; aged 80; for five years coroner of Crawford County; died, August 31, from cerebral hemorrhage.

Edwin Corlies Bullock, Chester, Pa.; Jefferson Medical College, 1906; aged 37; a member of the Medical Society of the State of Pennsylvania; died, October 18.

James A. Brown, New Kensington, Pa. (license, Pennsylvania, 1894); aged 76; a member of the Medical Society of the State of Pennsylvania; died, October 11.

N. F. Kirkland, Bamberg, S. C.; Medical College of the State of South Carolina, Charleston, 1856; aged 90; a veteran of the Civil War; died, September 26.

Julius P. May, Aspen Hill, Tenn.; University of Louisville, Ky., 1887; aged 64; a member of the Kentucky State Medical Association; died, September 12.

Percy H. Ealer ● Philadelphia; Hahnemann Medical College and Hospital, Philadelphia, 1890; aged 62; died suddenly, October 17, from heart disease.

William Sanders ● Louisville, Ky.; Kentucky School of Medicine, Louisville, 1904; aged 49; died, October 18, from cerebral meningitis.

Frederick Fremont Bigelow ● Island Falls, Maine; Jefferson Medical College, 1883; aged 62; died, September 24, from myocarditis.

Anthony John Hill, Torrington, Conn.; Niagara University Medical Department, Buffalo, 1886; aged 55; died about September 5.

John Haskell Billings, New York; College of Physicians and Surgeons in the City of New York, 1878; died, August 20.

Samuel B. Horning ● Norristown, Pa.; Jefferson Medical College, 1884; aged 58; died, October 19, from heart disease.

John M. Crandall, Charleston, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 67; died, October 6.

Robert Vaughn Ferguson, Pembroke, Ky.; Jefferson Medical College, 1885; aged 62; died, October 8, from diabetes.

William W. Moody, Sunbury, Pa.; Pennsylvania Medical College, Philadelphia, 1861; aged 86; died, October 17.

James B. Stetson, Sheffield, Ill.; Rush Medical College, 1870; aged 75; also a druggist; died, September 18.

Edwin W. Cook ● Rock Island, Ill.; State University of Iowa, Iowa City, 1884; aged 63; died, October 14.

Benjamin Frank Hockman, Sumner, Ill.; Medical College of Ohio, Cincinnati, 1893; aged 55; died, October 8.

Eliza Maria Ellinwood, Rome, N. Y.; University of Michigan, Ann Arbor, 1876; aged 71; died, October 1.

W. H. Bishop, Bremen, Ga.; Atlanta, Ga., Medical College, 1891; aged 69; died, August 12, from pellagra.

Abner Woodward, Trenton, N. J.; Jefferson Medical College, 1852; aged 89; died, September 30.

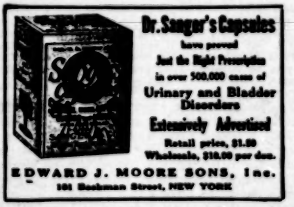
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED VENEREAL NOSTRUMS

Musser's Capsules.—A number of packages of these capsules, shipped in September, 1919, by the Musser-Reese Chemical Co., Pittsburgh, Pa., were seized by the federal authorities on the charge of misbranding. Analysis of a sample made in the Bureau of Chemistry showed that the capsules consisted essentially of copaiba balsam and oil of santal with indications of oils of cubebs and mace. According to the claims on the label, these capsules would quickly relieve all inflammations of kidneys and bladder and the purchaser was urged to use in connection with the capsules "Dr. Musser's Injection 500." The curative claims were declared false and fraudulent and in December, 1919, the court entered judgment of condemnation and forfeiture and ordered the product destroyed.—[*Notice of Judgment No. 7555; issued Oct. 8, 1920.*]

Dr. Sanger's Capsules.—Thirty-four cartons of these capsules were seized by the federal authorities on the charge that they were misbranded. They had been shipped in June,



1919, by the Edward J. Moore Sons, New York. The preparation was recommended "for Diseases Pertaining to the Mucous Membranes" and especially for cystitis, "Catarrh of the Bladder," retention of urine, leukorrhea, etc. The Bureau of Chemistry reported that analysis showed the capsules to consist essentially of copaiba, cubebs, santal oil, matico, licorice root and magnesium oxid. The therapeutic claims made for the capsules were declared false and fraudulent and in October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7566; issued Oct. 8, 1920.*]

Rid-It Capa.—Six dozen packages of this product consigned in June, 1918, by the S. Pfeiffer Mfg. Co., East St. Louis, Ill., were seized on the charge of misbranding. Analysis showed the preparation to consist essentially of salol, oils of juniper and sassafras, turpentine, a fixed oil and coloring matter. It was falsely and fraudulently recommended for the treatment of gonorrhea, gleet, catarrh of the bladder, rheumatic pains, chronic valvular troubles, etc. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7516; issued Sept. 24, 1920.*]

Black and White Capsules.—A number of packages of this product were seized in November, 1919, on the charge of misbranding. The product has been shipped by the Wilson Drug Co., Norfolk, Va., and was labeled in part: "Black and White Capsules for Men. . . . An Efficacious Remedy for the Affections of the Kidney, Bladder and Urinary Organs." The federal chemists reported that one-half of the capsules contained hexamethylenamin and the other half a mixture of volatile oils including cubebs and copaiba. The therapeutic claims were declared false and fraudulent and in December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7558; issued Oct. 8, 1920.*]

Benetol.—Government officials seized 288 bottles of this nostrum which had been shipped in August, September and October, 1919, by the Benetol Co., Minneapolis, Minn. The preparation was labeled in part:

"Men and Women Will find Benetol a highly efficient douche or injection, or local wash, to insure against infection or to quickly check germ diseases.

"Gonorrhea — Take internally twenty drops in hot water after meals and before retiring. As injection, irrigation or douche use thirty drops of Benetol per glass of warm water or teaspoonful per pint of warm water. Use at night before retiring.

"Gleet—Start treatment as above and gradually increase injection, etc., to teaspoonful per glass of water if necessary."

The federal chemists analyzed the product and reported that the stuff consisted essentially of alphanaphthol, soap, glycerin, water and traces of essential oils and alcohol. This analysis agrees essentially with that made by the chemists in the A. M. A. Chemical Laboratory in 1911, at which time the nostrum was exposed in THE JOURNAL. The federal authorities in the present case held that the therapeutic claims made for Benetol "were false and fraudulent in that the product contained no ingredient or combination of ingredients capable of producing the effects claimed for it." In December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7561; issued Oct. 8, 1920.*]

G-U-C Capsules.—More than fifty bottles of this nostrum were seized by the federal authorities on the charge that the product was misbranded. It had been shipped in July, 1919, by the Hollander-Koshland Co., Baltimore. It was recommended as a treatment for "Gonorrhea and Gleet and disorders of a similar nature and origin." The federal chemists reported that analysis showed the capsules to consist of a sulphurated oil with volatile oils, including copaiba, cinnamon and santal oils. The therapeutic claims were declared false and fraudulent and in November, 1919, judgment of condemnation and forfeiture was entered and the court ordered the product to be destroyed.—[*Notice of Judgment No. 7587; issued Oct. 8, 1920.*]

Merz Santal Compound.—Several dozen packages of this product shipped by the Merz Capsule Company of Detroit, in

June, 1919, were declared misbranded. Analysis showed the preparation to consist of balsam copaiba, cassia, sandalwood oil and a sulphurated oil. It was falsely and fraudulently claimed to be a cure for catarrh of the bladder, inflammation of the bladder and other diseases of the genito-urinary organs. In September, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7505; issued Sept. 24, 1920.*]

Enoob Antiseptic Injection and Capsules.—These products shipped in December, 1917, by the Tropical Cooperative Co., Jacksonville, Fla., were declared misbranded. Analyses showed the "injection" to be essentially a solution of phenol

(carbolic acid), menthol, thymol, boric acid and zinc sulphate in water and the "capsules" to consist essentially of cubebs, copaiba, gum turpentine and pepsin with indications of santal oil. The products were falsely and fraudulent represented as a treatment and cure for gonorrhea, gleet and other diseases of the bladder and urinary organs. In July, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product should be destroyed.—[*Notice of Judgment No. 7507; issued Sept. 24, 1920.*]

White Swan Injection.—Some bottles of this preparation which had been shipped in February, 1917, by the Stacy Chemical Co., Houston, Texas, were seized by the federal authorities on the charge that the product was misbranded. The article was labeled in part:

"A new and scientific combination for the successful treatment of Gonorrhea and Gleet and all urinal complications. This remedy used in accordance with directions is very effective in the worst cases."

Analysis of the preparation by the federal chemists showed it to be essentially a watery solution of boric acid, salts of aluminum, zinc and ammonium, glycerin and phenol (carbolic acid) with bismuth subgallate in suspension. The therapeutic claims were declared false and fraudulent and in October, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 7568; issued Oct. 8, 1920.*]

Correspondence

HOT FLOORS AS A PREVENTIVE TO SHOCK

To the Editor:—I have been operating in Korea for the last twelve years and have never been bothered with "surgical shock," the reason being the "kan," or heated floor, which we have in Korea and certain parts of China. This floor is a wonderfully economical thing, being heated with the smoke after the rice has been cooked. A pot or kettle is placed outside and below the level of the floor of the room, usually in a sort of lean-to. Fuel of grass, weeds, straw, pinetops or the like is used to cook the rice, which takes only a few moments. The rest of the heat and smoke passes under the sleeping or living room and heats the floor, which is made of stones covered with plaster, and over this a very thick layer of native paper similar to linoleum. After the rice is cooked the water must be heated, or the food for the cow is heated; and, of course, cooking three meals a day heats these thick rock and plaster floors, which remain hot for twelve hours.

An American takes off his hat when entering his home. A Korean removes his shoes at the door and enters in the cozy little 8 by 8 foot room, leaving his hat on. Instead of taking a chair, he sits on the hot floor, and smokes his pipe. On retiring, he removes his overcoat and hat, made of horsehair, and stretches himself at full length on this floor, which has been scrubbed clean during the day. He usually sleeps with his clothes on, with little or no cover except toward daybreak when, as it begins to grow chilly, he may cover himself with a quilt or his overcoat. In cold weather he reclines near the hot spot. If one has rheumatism or some painful area and reclines on this hot spot, one finds it a wonderful remedy. The good mother or sister becomes skilful in heating the floor to the proper degree according to the season. In warm weather she rakes out the hot coals, or cooks elsewhere.

One evening, two other Americans and myself arrived at one of these houses to spend the night. It had been a cold day, and after waiting an hour for the room to become warm we insisted that more fire be made. We were told that by and by it would be warm enough, but still insisted, and more fire was made. This caused us a sleepless night; for two hours later, just as we had fallen asleep, the floor became so warm that we were obliged to turn over repeatedly so as to prevent being roasted.

The basement floor of my hospital has rooms heated in this manner, and it is needless to say that these are the popular rooms of the hospital. Every patient that has been operated on is placed over a hot spot, covered with blankets, and kept there until he is well heated, usually for the entire night. We have amputations, laparotomies and other long operations in which shock would naturally be expected, but seldom or never a case of shock. We perform about 450 operations a year, and I firmly believe that this hot spot is the reason we do not have shock.

As we use chloroform almost exclusively as an anesthetic, one might expect more shock; but during my twelve years we have never lost a case from the anesthetic, and shock is very rare.

R. M. Wilson, M.D., Kwangju, Korea.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECT OF PREGNANCY ON THE VOICE

To the Editor:—Please inform me what effect pregnancy has on the voice. Would it be a risk for a professional singer to use her voice, either for concert work or for parties, during pregnancy? Is there more of a chance of her voice being changed following pregnancy (*a*) if she were to use it, or (*b*) if she were not to use it (during pregnancy)? Is it a fact that some noted singer or singers have found their voices to be impaired after pregnancy? If you publish, kindly omit my name.

C., Oakland, Calif.

Answer.—So far as we know, there are no grounds for supposing that pregnancy has any deleterious effect on the voice, or that a singer takes any risk in using her voice for concert work or parties during pregnancy. Nor are there any grounds for believing that there will be any change in the voice following pregnancy, whether the singer uses or does not use the voice during this period.

As regards singers finding their voices impaired after pregnancy: It would be strange if such a coincidence might not occur, but such a relationship as cause and effect does not exist. For instance, one of our best known modern singers has seven grown sons. She is still on the concert stage, and it is not known that at any time she was incapacitated for more than a few months during a pregnancy. In a word, normal pregnancy is a physiologic, normal condition.

COMPOSITION OF EGGSHELL

To the Editor:—I should like to know the composition of the shell of a hen's egg, particularly the acid-insoluble portion.

B. G. R. Williams, M.D., Paris, Ill.

Answer.—According to Tibbles (Foods, Their Origin and Manufacture), the shell of the hen's egg, including its lining membrane, amounts to 11 per cent. of its weight. According to the same author, the composition of the entire shell is:

	Per Cent.
Calcium carbonate	93.7
Magnesium carbonate	1.3
Calcium phosphate	0.8
Organic matter	4.0

The "organic matter" consists mostly of the lining membrane of the shell. This has practically the composition of keratin. Most writers, in fact, consider it as a form of keratin. Exclusive of the lining membrane, the shell contains only traces of organic matter (from 36 to 65 parts per million).

REQUEST FOR UNREPORTED INSTANCES OF MYCETOMA, OR MADURA FOOT

To the Editor:—I am collecting records of the occurrence of mycetoma, or Madura foot, in North America, and I am anxious to get in touch with physicians who have knowledge of cases that have not been reported in the literature.

Mark F. Boyd, M.D., Galveston, Texas.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec. Reg. Bd., Dr. T. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

CONNECTICUT: Hartford, Nov. 9-10. Sec. Reg. Bd., Dr. Robert L. Rowley, Hartford.

CONNECTICUT: New Haven, Nov. 9. Sec. Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT: New Haven, Nov. 16-17. Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

DELAWARE: Dover, Dec. 14-16. Sec., Reg. Bd., Dr. P. S. Downs, Dover.

FLORIDA: Gainsville, Dec. 6-7. Sec. Reg. Board, Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

ILLINOIS: Chicago, Dec. 6-7. Director, Mr. F. W. Shepardson, Capitol Bldg., Springfield.

LOUISIANA New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MARYLAND: Baltimore, Dec. 14. Sec., J. McP. Scott, 137 W. Washington St., Hagerstown.

MASSACHUSETTS: Boston, Nov. 9-11. Sec., Walter P. Bowers, Room 144, State House, Boston.

NEBRASKA: Lincoln, Nov. 11-12. Sec., Mr. H. H. Antles, Lincoln.

OHIO: Columbus, Dec. 1-3. Sec., H. M. Platter, State Houst, Columbus.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 16-18. Sec., Dr. Thomas J. Crowe, 617-20 Trust Bldg., Dallas.

VIRGINIA: Richmond, Dec. 14-17. Sec., J. W. Preston, 511 McBain Bldg., Roanoke.

CLASSIFICATION OF DENTAL SCHOOLS

The following classification of dental schools by the Dental Educational Council of America is said to be revised to August, 1920. According to the report, these classifications were all made on the basis of the requirements in force prior to April 30, 1920:

CLASS A

University of Southern California College of Dentistry, Los Angeles.
University of California College of Dentistry, San Francisco.
Northwestern University Dental School, Chicago.
University of Illinois College of Dentistry, Chicago.
University of Iowa College of Dentistry, Iowa City.
Harvard University Dental School, Boston.
Tufts Dental College, Boston.
University of Michigan College of Dentistry, Ann Arbor, Mich.
University of Minnesota College of Dentistry, Minneapolis.
St. Louis University Dental School, St. Louis.
Creighton University College of Dentistry, Omaha.
University of Buffalo Dental Department, Buffalo.
Ohio State University College of Dentistry, Columbus, Ohio.
North Pacific Dental College, Portland, Ore.
University of Pittsburgh College of Dentistry, Pittsburgh.
The Thomas W. Evans Museum and Dental Institute, University of Pennsylvania.
Vanderbilt University School of Dentistry, Nashville, Tenn.
Medical College of Virginia School of Dentistry, Richmond, Va.
Marquette University College of Dentistry, Milwaukee.

CLASS B

College of Physicians and Surgeons Dental Department, San Francisco.
Colorado College of Dental Surgery, Denver.
Georgetown University School of Dentistry, Washington, D. C.
George Washington University Dental School, Washington, D. C.
Howard University Dental School, Washington, D. C.
Atlanta-Southern Dental College, Atlanta, Ga.
Chicago College of Dental Surgery, Chicago.
Indiana College of Dentistry, Indianapolis.
Louisville University College of Dentistry, Louisville, Ky.
Loyola University School of Dentistry, New Orleans.
Tulane University School of Dentistry, New Orleans.
Baltimore College of Dental Surgery, Baltimore.
University of Maryland Dental Department, Baltimore.
Washington University Dental School, St. Louis.
Kansas City-Western Dental College, Kansas City, Mo.
University of Nebraska College of Dentistry, Lincoln, Neb.
New York College of Dentistry, New York.
College of Dental and Oral Surgery of New York, New York.
Western Reserve University Dental School, Cleveland.
Ohio College of Dental Surgery, Cincinnati.
Philadelphia Dental College, Philadelphia.
University of Tennessee College of Dentistry, Memphis, Tenn.
Meharry Dental College, Nashville, Tenn.
Baylor University College of Dentistry, Dallas, Texas.

CLASS C

College of Jersey City, N. J.
University of West Tennessee, Memphis, Tenn.
Texas Dental College, Houston, Texas.
Cincinnati College of Dental Surgery, Cincinnati.

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, June 14-18, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 243 candidates examined, 221 passed and 22 failed. Thirteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Denver Homeopathic College		(1904)	1
University of Colorado		(1919)	1
Chicago College of Med. and Surg.	(1911), (1916),	(1917)	3
Chicago Hospital College of Medicine	(1918),	1919)	2
Chicago Medical School		(1920)	12
Jenner Medical College, Chicago		(1916)	1
Loyola University	(1919) 4, (1920)*	47	51
Hahnemann Med. College and Hospital Chicago		(1920)	3
Northwestern University	(1920)† 57,	(1917) 1	58
Rush Medical College		(1920)	35‡
University of Illinois		(1920)	40
Women's Medical College of Chicago		(1887)	1
University of Louisville Medical Department		(1920)	1
Harvard University	(1916), (1917),	(1920)	3
St. Louis University School of Medicine		(1920)	3
Washington University Medical School		(1920)	2
Fordham University School of Medicine		(1917)	1
Long Island College Hospital		(1903)	1
Jefferson Medical College of Philadelphia		(1920)	1
Chattanooga Medical College		(1909)	1

College	FAILED	Year Grad.	Number Failed
Chicago College of Medicine and Surgery	(1913),	(1917)	2
Chicago Medical School		(1920)	4
Chicago Hospital College of Medicine		(1918)	3
Hahnemann Medical College and Hospital, Chicago		(1920)	1
Loyola University	(1916),	(1920)	2
University of Illinois		(1920)	2
St. Louis University Medical School		(1920)	1
Meharry Medical College	(1908), (1913), (1913), (1913), (1916), (1917),	(1920)	7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1908)	Texas
State University of Iowa College of Med.	(1912),	(1919)	Iowa
State Univ. of Iowa Coll. of Homeopathic Med.		(1912)	Iowa
Loyola University		(1916)	Missouri
Harvard University		(1910)	Maine
Tufts College Medical School		(1918)	Mass.
Johns Hopkins University Medical Department		(1916)	Maryland
University of Michigan Homeopathic Med. School		(1916)	Michigan
St. Louis University School of Medicine		(1918)	Missouri
Western Reserve University School of Medicine		(1935)	Ohio
Marquette University School of Medicine		(1913)	Wisconsin
Milwaukee Medical College		(1911)	Wisconsin

* Forty-five candidates received temporary licenses pending completion of their hospital internships.

† Fifty-six candidates received temporary licenses pending completion of their hospital internships.

‡ Thirty-three candidates received temporary licenses pending completion of their hospital internships.

Iowa June Examination

Dr. G. H. Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, June 16-18, 1920. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 24 candidates examined, 23 passed and 1 failed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Cooper Medical College		(1912)	91.5
Yale University		(1904)	87.8
University of Illinois		(1920)	87.3
State University of Iowa School of Medicine		(1920)	82.1, 84.7, 85.5, 86.1, 86.3, 86.3, 86.5, 86.7, 88.3, 89.6, 90.3, 90.5
Johns Hopkins University		(1920)	85.8
Harvard University		(1915) 88.2, (1918)	87.2
St. Louis University School of Medicine		(1920) 84.2, 86.6,	87
Meharry Medical College		(1912)	75.3
University of Virginia		(1918)	87.3

College	FAILED	Year Grad.	Per Cent.
Loyola University		(1918)	73.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois	(1916), (1918, 2)		Illinois
Rush Medical College		(1915)	Illinois
Harvard University		(1915)	Penna.
Medical School of Maine		(1908)	New Hamp.
University of Minnesota Medical School		(1903)	Minnesota
University of Michigan Homeopathic Med. School		(1883)	Nebraska
Washington University		(1919)	Missouri
John A. Creighton Medical College		(1913)	Nebraska
Eclectic Medical College		(1907)	Illinois
Jefferson Medical College		(1896)	Penna.
University of Virginia		(1896)	Virginia
Marquette University		(1917)	Wisconsin

Book Notices

CHEMISTRY FOR PUBLIC HEALTH STUDENTS. By E. Gabriel Jones, M.Sc., F.I.C., Lecturer in Public Health Chemistry in the University of Liverpool. Cloth. Price, 6 shillings. Pp. 244. London: Methuen & Co., 1920.

The material in this easily readable book has been compiled from work sheets and notes of lectures provided for students preparing for the Diploma in Public Health. The criterion of standards is that applicable to conditions in England rather than to those in the United States. The methods of analysis, however, are so detailed that persons who possess only an elementary knowledge of quantitative chemistry may have little trouble in pursuing this type of work; nor does the author feel that it is necessary to apologize for inclusion of the "examples of calculation"—"it has been found that these explanations are necessary in order to avoid waste of time over the arithmetical part of the work." The book is divided by subtitles dealing with gravimetric and volumetric analysis, various food classifications, water, sewage effluents, air and disinfectants.

One fallacy which many authors, especially the English, persist in perpetuating is that an oxidizing reaction necessitates the "giving up" of oxygen. Thus Mr. Jones states in reference to calcium hypochlorite:

> By reason of the ease with which it gives up oxygen to reducing substances, bleaching powder is a powerful oxidizing agent, and it is to this fact that it owes much of its disinfectant power.

As has been pointed out previously in THE JOURNAL, this explanation is not according to present-day concepts. In modern chemistry, oxidation may be considered to involve ultimately the assumption of positive or loss of negative electrical charges by ions or atoms, and defined "as consisting fundamentally in the loss of electrons by atoms or ions" (Stieglitz, Qualitative Chemical Analysis).

On the whole, this is an up-to-date treatise. Physicians who are actively engaged in public health work, either from an administrative or a laboratory point of view, will find the book a worthy addition to their library.

THE NEWER METHODS OF BLOOD AND URINE CHEMISTRY. By R. B. H. Gradwohl, M.D., Director of the Gradwohl Laboratories, Chicago and St. Louis, and A. J. Blaivas. Second edition. Cloth. Price, $5. Pp. 418, with 79 illustrations. St. Louis: C. V. Mosby Company, 1920.

This edition has been considerably enlarged by the inclusion of new matter. Among the recent methods introduced we find the processes for the systematic examination of the blood advanced by Folin and Wu, which are probably the best at our disposal for the chemical examination of the blood. It is unfortunate that the newer modification of the blood-sugar test of these authors was not included; but this, no doubt, is due to the fact that the test did not appear in time for inclusion. An entirely new section dealing with the increasingly important work on basal metabolism has been introduced, which should prove of great value to those desiring a knowledge of the basis of such work. Especially important to the general worker are the sections dealing with the interpretation of the blood findings. These sections give in full detail the findings to be expected in the many conditions to which such examinations are applicable. We can recommend this book to all who desire to keep in touch with this field of laboratory diagnosis, which is fast becoming of such great importance from the clinical point of view.

WOMAN AND THE NEW RACE. By Margaret Sanger. With a Preface by Havelock Ellis. Cloth. Price, $2. Pp. 234. New York: Brentano's, 1920.

The primary mark of the propagandist is the fact that he is inclined to consider his particular subject the panacea for all human ills. This is especially exemplified in the book by Mrs. Sanger. According to the author, if we can once have birth control, we shall prevent war and profiteering, poverty and tuberculosis; improve housing conditions; stamp out disease, and raise a race of physical and mental giants. Besides this, the world will be improved in its morality, and womanhood will at last shake off its bondage. In her final peroration: "Great beings come forth at the call of high desire. Fearless motherhood goes out in love and passion for justice to all mankind. It brings forth fruits after its own kind. When the womb becomes fruitful through the desire of an aspiring love, another Newton will come forth to unlock further the secrets of the earth and the stars. There will come a Plato who will be understood, a Socrates who will drink no hemlock, and a Jesus who will not die upon the cross. These and the race that is to be in America await upon a motherhood that is to be sacred because it is free." But a cruel government has ruled that methods of birth control cannot be taught, that apparatus for birth control cannot be sold; and so all of these must wait! Mrs. Sanger cannot even tell about the practical end of the matter in her most recent book; if she did, the book would be suppressed and that would not help Mrs. Sanger, who has already been considerably suppressed. Physicians will learn very little from this book; the public will learn much that is not quite accurate and a great deal which it could just as well do without. This does not mean that many intelligent, thoughtful and earnest people are not in favor of birth control; it means that, like many other great causes, the cause of birth control has been much injured by its chief propagandists.

TASCHENBUCH DER FRAUENHEILKUNDE. By Dr. Koblanck, a. o. Professor an der Universität, Berlin. Second edition. Cloth. Price, 54 marks. Pp. 282, with 63 illustrations. Berlin: Urban & Schwarzenberg, 1920.

In the preface, Koblanck states that this book is intended for the general practitioner. He omits microscopic diagnosis and the technic of major operations as belonging more strictly in the sphere of the specialist. For the purpose intended, the little volume is a valuable one. The subject matter is handled in an authoritative and at the same time practical manner. Particularly excellent are the chapters on gonorrheal infections and on carcinoma of the uterus, because of the emphasis on the things the general practitioner ought to know. A novel feature for a handbook is the introduction of such subjects as nasal reflexes in their relation to the menstrual function, disturbances of sexual life, etc. There is a brief but adequate discussion of the diseases of the breast and of the rectum.

OHRENHEILKUNDE FÜR DEN PRAKTISCHEN ARZT. Von Privatdozent Dr. Rudolf Leidler. Paper. Price, 30 marks. Pp. 278. Berlin: Urban & Schwarzenberg, 1920.

This handbook, designed to assist the practitioner in the care of otologic patients when specialists are not in reach, falls into the error common to books of Teutonic origin. The earnest and zealous love of detail has clouded the work with a mass of text, the majority of which can be of interest only to the specialist. In this regard it is inferior to recent English and French books of similar design. The material of the text is excellent and is readily recognized as a compend of Politzer's classics. The subject matter is so well arranged that the lack of an index will scarcely be noticed.

GRUNDRISS DER PHYSIOLOGIE FÜR STUDIERENDE UND ÄRZTE. Von Prof. Carl Oppenheimer, Dr. phil. et med. München, und Prof. Dr. Otto Weiss, Dir. des physiol. Instituts Königsberg i. Pr. Erster teil: Biochemie. Von Carl Oppenheimer. Third edition. Cloth. Price, $1.98. Pp. 522, with 6 illustrations. Leipzig: Georg Thieme, 1920.

This is the first part of a series of volumes covering the subject of physiology. It is a clear, concise, well selected presentation of modern biochemistry. It differs from the usual American textbooks of physiologic chemistry, as it is presented more from the biologic side; it is not intended to serve as a laboratory manual.

RECTOSCOPIE: SIGMOIDOSCOPIE. Traité d'endoscope recto-colique. Par le Dr. R. Bensaude, Médecin de l'Hôpital Saint-Antoine. Paper. Price, 28 francs. Pp. 63, with 88 illustrations. Paris: Masson et Cie, 1919.

The chief value of this work lies in the description and interpretation of the findings as seen by means of the rectoscope and sigmoidoscope, and in the colored plates. The text is well written and indicates a personal knowledge of the subject based on experience. The plates, which are taken from actual cases, are particularly well done and constitute a valuable atlas.

Medicolegal

Manslaughter by Treatment with Hog-Hoof Brew and Incantations

(Barrow v. State (Okla.), 188 Pac. R. 351)

The Criminal Court of Appeals of Oklahoma affirms a conviction of manslaughter in the second degree, charged to gross ignorance and culpable negligence in the treatment of disease resulting in death, for which defendant Barrow was sentenced to serve a term of two years' imprisonment in the state penitentiary. The information charged, in effect, that the defendant, although grossly ignorant of the science of medicine and grossly incompetent to act as a physician, and not licensed as one under the laws of the state, held himself out as a physician, to one Lankford, who was suffering from disease or sickness; and, wrongfully, and by malpractice in the use of remedies, by unskilful acts and culpable negligence, wanton failure and refusal to give ordinary remedies, etc., did kill the said Lankford. The information charged further that the defendant administered to Lankford as a medicine a brew made by burning hog feet that had been thrown out as refuse, pretending that the brew possessed curative qualities, and, accompanied with some incantation, rubbed Lankford's limbs and body. The court holds that the information was not duplicitous, although it charged more than one way in which the defendant, through gross ignorance and culpable negligence, attempted to treat and heal the sickness or disease from which Lankford was alleged to have been suffering, and which was alleged to have contributed to and resulted in the latter's death. Furthermore, the information as a whole was sufficiently definite and certain as to the various means employed. It stated an offense which, if proved to be true, would justify a conviction of manslaughter in the second degree.

There was evidence in the record to the effect that at the time the defendant undertook to treat him, Lankford was suffering from an attack of grip which was bordering on incipient pneumonia; that the defendant was aware of his condition, and at first protested against treating him, but thereafter, being prevailed on by relatives of Lankford, he undertook the treatment and administered to him by laying on of the hands and offering a prayer or incantation that the pain be transmitted from Lankford's body to his own; also by administering to Lankford a brew or concoction made by parching and boiling hog hoofs, and also by giving Lankford shortly before death a headache or fever powder containing 3½ grains of acetanilid. The defendant contended that, in view of the fact that from 10 to 40 per cent. of patients suffering from the disease Lankford had died, despite the very best of medical attention and nursing, it could only be surmised that the treatment administered by the defendant possibly may have contributed to Lankford's death, and that the evidence of guilt amounted only to a suspicion, and that the crime was not proved with that degree of certainty which authorizes a conviction in a criminal case. But the question here was not whether Lankford would have lived had he received treatment according to the care and skill usual among good practitioners of any recognized and authorized school, but did the treatment given and applied by the defendant contribute to and result in his death, and was the defendant grossly ignorant of the manner in which such disease should be treated and culpably negligent of the patient in giving the treatment? There was evidence in this record from which the jury was authorized reasonably to conclude that death resulted in the manner charged in the information. The application of the hands, accompanied with an incantation or prayer that the pain be transmitted from Lankford's body to that of the defendant, the administering of hog-hoof tea and of the headache or fever powder at the time it was given, evidenced gross ignorance and culpable negligence on the part of the defendant in the treatment of the disease.

The crime here did not consist in the omission to perform some duty specifically imposed by law. The defendant owed Lankford no duty; but, having assumed to treat him for disease, the defendant was bound to know the nature of the remedies he prescribed and the treatment he adopted, and he was responsible criminally for a death resulting from gross ignorance and culpable negligence. A person assuming to treat disease is bound to know the nature of the remedies he prescribes and the treatment he adopts, and he is responsible criminally for a death resulting to the patient from gross ignorance and culpable negligence in the selection of remedies and the application of the treatment.

Sued for Exhibiting Motion Picture of Operation

(Feeney v. Young (N. Y.), 181 N. Y. Supp. 481)

The Supreme Court of New York, Appellate Division, First Department, says that the plaintiff, in giving birth to a child, was compelled to undergo a cesarean section operation. The defendant was her physician. She gave him her oral consent to a motion picture being taken of the operation, to be exhibited for medical societies and in the interest of medical science. The picture was taken by one Warman. Thereafter the defendant and Warman exhibited the picture publicly in two of the leading motion picture houses in New York as part of a picture which was named "Birth." The exhibition was made clearly for the purposes of trade. Thereupon this action was brought to recover damages, under the civil rights statute of the state of New York, for the exhibition of the plaintiff's picture without her written consent. Her complaint was dismissed at the close of her evidence; but the judgment dismissing the complaint is reversed, and a new trial granted, on account of error in excluding the testimony of witnesses who had seen the picture as thrown on the screen, by whom the plaintiff sought to show that the picture, as it appeared on the screen, represented the plaintiff, and could be identified as her picture. The trial court held that the film used to throw the picture on the screen was the best evidence of what was there exhibited, but little could be ascertained from the film. The picture, as presented on the screen, constituted the offense under the statute. If that were a permanent photograph, the photograph itself might probably be the better evidence; but it was not. It was a flash picture, presented only for a moment. There was, therefore, no permanent print of that presentation on the screen which could be deemed the best evidence, and, in the absence of such permanent print, the evidence of eyewitnesses, who had seen the representation, must be competent evidence of the presentation itself.

Release as to Conditions Shown by Examination

(Hines v. Industrial Accident Commission (Calif.), 188 Pac. R. 277)

The Supreme Court of California had here an application by Hines, director-general of railroads, as employer, for a writ of certiorari to review an award of compensation made by the industrial accident commission to an employee of the Southern Pacific Company. The application was based on the following agreement that was executed by the employee:

> Having submitted myself to an examination by an examining physician of the Southern Pacific Company, with a view of entering the service of that company, it has been found that I have a congenital defect, viz.: lax inguinal rings. I have been fully advised and informed concerning such condition, and it has been explained to me that because of such congenital defect, a protrusion of the abdominal contents, commonly known as rupture or hernia, may take place at any time and due wholly to said congenital defect. Realizing this and in consideration of my employment by the Southern Pacific Company I hereby agree to hold the said company blameless in event of said rupture or hernia so appearing, and I will not apply to said company or its hospital department during my term of service for any operation or treatment therefor; and for the consideration herein above expressed I do hereby release the Southern Pacific Company from any and all claims that may arise on account of rupture or hernia so appearing while in its service.
>
> It is further understood and agreed that I am not entitled to hospital benefits for the following further disability from which I am now suffering, to wit: chronic affection of tonsils.
>
> It is further understood and agreed that I am entitled to and will be given hospital benefits for all other disabilities than those I am now subject to, in accordance with the rules and regulations of the hospital department of the said company.

The supreme court denied the application for a writ of review with the simple statement that it was satisfied that, in view of the provisions of the workmen's compensation, insurance, and safety act of California of 1917, the employer could not avail himself of the agreement relied on.

Society Proceedings

COMING MEETINGS

American Physiological Society, Chicago, Dec. 30.
District of Columbia, Medical Society of, Washington, Dec. 1.
Hawaii, Medical Society of, Honolulu, Nov. 18-20.
Medical Association of the Southwest, Wichita, Kan., Nov. 22-24.
Porto Rico, Medical Association of, Ponce, Dec. 13-14.
Radiological Society of North America, Chicago, Dec. 16-17.
Society of American Bacteriologists, Chicago, Dec. 28-30.
Southern Medical Association, Louisville, Ky., Nov. 15-18.
Southern Minnesota Medical Association, Mankato, Nov. 29-30.
Southern Surgical Association, Hot Springs, Va., Dec. 14-16.
Western Surgical Association, Los Angeles, Calif., Dec. 3-4.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at South Bend, Sept. 23-24, 1920

(Concluded from page 1224)

Surgery of Gallbladder

DR. LUTHER WILLIAMS, Indianapolis: The type of operation can best be determined by the surgeon after a thorough knowledge of the history, the physical findings and a careful survey of the pathologic condition present. Operative treatment should be instituted early. Each case will require its particular type of operation, but the vast majority of patients will do best with a complete removal of the gallbladder.

DISCUSSION

DR. WILLIAM DAVIDSON, Evansville: In cases of cholangeitis, ordinary drainage of the gallbladder is not sufficient. It would be better done through long drainage of the common duct by means of the Sullivan tube.

DR. JAMES Y. WELBORN, Evansville: In some gallbladders, the pathologic condition is apparently slight, and yet the cystic duct is hardened, reminding one of the "grape-vine" condition found in the arteries. The clinical history reveals chronic symptoms, afebrile in nature. We find a catarrhal condition in the cystic duct, and there is just enough pressure in the common duct to press the bile through, and it remains stagnant in the gallbladder itself. The only treatment for such cases is removal of the gallbladder.

DR. A. M. HAYDEN, Evansville: If the gallbladder is in bad shape the only thing to do is to remove it; otherwise it is better to drain.

DR. H. A. DUEMLING, Fort Wayne: I do not think that stones reform. They have been overlooked by the surgeon in 99 per cent. of cases, because he is so happy in removing anywhere from twenty to a hundred stones that he forgets to look into the common duct.

DR. W. D. GATCH, Indianapolis: Complete exploration of the whole duct system in all cases of jaundice is most important. A good instrument for that purpose is an ordinary urethral bougie.

DR. ALFRED S. JAEGER, Indianapolis: So long as the general practitioner considers acute or chronic gastric derangement to be caused by changes in the stomach, just so long as he bases a diagnosis of cholecystitis on jaundice or coffee-ground vomiting, just so long will we see these cases too late.

DR. J. C. FLEMING, Elkhart: In this controversy of cholecystectomy versus cholecystostomy we should err on the side of conservatism, because if a gallbladder is removed it cannot be put back, but if a cholecystostomy is performed, the gallbladder may be taken out afterward, if necessary.

DR. W. H. WILLIAMS, Lebanon: I think we sometimes make the mistake of not draining enough. If we are going to drain a gallbladder we should drain it well.

Silver Wire in Vesicovaginal Fistula

DR. J. R. EASTMAN, Indianapolis: I believe that the use of silver wire in vesicovaginal fistula is to be considered a contravention of a surgical dogma. Silver wire is always sterile; it cannot be contaminated in the sense that absorbable suture material may be contaminated, and the field of silver as a bactericide is well known. A comparison of the statistics of those operators who cling to silver wire in vesicovaginal fistula and the statistics of those who have been lured away from it would make it clear that silver wire in this condition is one of the most reliable resources of surgery.

DISCUSSION

DR. FRANK JETT, Terre Haute: I use filigree wire because it has a mild antiseptic effect, and then it causes a slight irritation which is followed by a fibrosis. I have used it several times in hernia operations with great success.

DR. LUTHER WILLIAMS, Indianapolis: I have had some failures with catgut, and silver wire seems to have helped me over some of the hard places.

DR. E. E. PADGETT, Indianapolis: I have tried other suture material in the bladder, but have come back to silver wire, although during the last two years I have used a modification that has served me better. I dissect the mucous membrane out after a wide incision has been made, bring the edges together with ordinary plain No. 1 catgut, and then I close it according to Dr. Eastman's method with silver wire.

Cancer of the Breast

DR. MILES F. PORTER, Fort Wayne: The number of operative plans advised for removal of cancer of the breast is great, and of each perhaps something good may be said; but no one may be said to be the best. The surgeon should make himself master of the whole situation and then perform that operation which best suits the case in hand, remembering that no sacrifice in the way of time, cosmetic results or utility is too great to make for the cure of the patient, but unnecessary mutilation is to be avoided. Properly planned incisions, with undermining of the skin, and, at times, mobilizing of the opposite breast, will make it possible to close nearly all of these wounds. The posterior thoracic nerve should be preserved, and the flap lining the axillary space should be held snugly in the apex by stitches or dressing to avoid subsequent inability to raise the arm. Careful and complete hemostasis adds to the safety and comfort of the patient, and may do away with the necessity of drainage. Early use of the arm should be encouraged.

DISCUSSION

DR. W. D. GATCH, Indianapolis: The propaganda through the press, medical and lay, warning people of the necessity of being on the lookout for early signs of malignancy, is bearing fruit, and women are coming in with early lesions—lesions which it seems impossible to diagnose without an exploratory incision. We make a bad mistake if we wait for retraction of the nipple and invasion of the skin and lymph nodes. In case one is not sure, one should explore.

DR. THOMAS C. KENNEDY, Indianapolis: Until about four years ago I refused to treat any patient with radium that had not been operated on. Since that time, however, I have treated a few such cases and with apparently good results. I am not advising the use of radium in operable cases—I believe we should resort to surgery, but with improvement in technic and with a larger number of cases, I believe the number of operable cases will be somewhat limited.

Student Health at Indiana University

DR. J. R. E. HOLLAND, Bloomington: An important factor in the health of our students at Indiana University is the close watch on the condition of the water used by the students. Our bacteriologist makes daily examination of the city water supply, the university water supply, and the water from the different swimming pools. This has proved a valuable means of preventing the various enteric disturbances due to polluted water.

The Duty of the State to the Epileptic

DR. W. D. VAN NUYS, New Castle: State care for the epileptic is not a charity but a duty. In Indiana it is so declared by law. Proper care for epileptics can best be provided in special public institutions designed for their peculiar needs, but this cannot be accomplished without a liberal policy on the part of the state.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

October, 1920, 20, No. 4

*Acrocephaly and Scaphocephaly with Symmetrically Distributed Malformations of the Extremities. E. A. Park and G. F. Powers, Baltimore.—p. 235.
*Calcium Metabolism of Premature Infants. B. Hamilton, Stockholm, Sweden.—p. 316.
*Tumors of Kidney Region in Children. L. Porter and W. E. Carter, San Francisco.—p. 323.
*Metabolism of Very Obese Child with Small Sella Turcica (Typus Frölich). F. B. Talbot, Boston.—p. 331.
*Fate of Subcutaneously Injected Red Blood Cells. R. Taylor, Minneapolis.—p. 337.
*Pneucococcus Peritonitis in Infancy and Early Childhood. P. W. Beaven, New York.—p. 341.

Acrocephaly and Scaphocephaly.—Park and Powers cite one case, and present a detailed report of the literature with abstracts of published cases.

Calcium Metabolism of Premature Infants.—Three infants out of four studied by Hamilton had very low calcium retentions during the first months of life. This might possibly be ascribed to rachitis, as in all the infants craniotabes appeared in the second month. The assumption, however, is not in harmony with the fact that although the craniotabes in these cases which were followed further made progress in the subsequent months, the retentions increased to amounts as large as those found in normal infants.

Tumors of Kidney in Children.—Eleven cases are analyzed by Porter and Carter. They fall into the following groups: sarcoma, 4 cases; carcinoma, 3 cases; malignant kidney, unclassified, 2 cases, and hydronephrosis, 2 cases.

Metabolism of Very Obese Child.—Talbot's patient showed a very low metabolism from every point of view as compared with normal children of the same age, except the total basal metabolism. When he did not receive the pituitary extract he gained in weight and presumably put on fat very rapidly even on a diet containing relatively few calories. After pituitary extract was supplied he lost weight and commenced to develop mentally. It is to be hoped that the metabolism of similar cases will be studied in the future and thus throw light on such obscure conditions as this child presents.

Fate of Subcutaneously Injected Red Blood Cells.—Taylor says that subcutaneous injection of blood is usually followed by a rise in hemoglobin percentage and only a small fraction of the cells so injected reach the circulation of the recipient.

Pneumococcus Peritonitis.—The nine cases reported by Bevan show that clinically two types of the disease are met with: (1) those which are clearly secondary to a pneumonia or an empyema and (2) those which are apparently primary. The onset of the first may be unattended by any definited symptoms or these symptoms may be so slight as to be easily overlooked, and nothing is apparent until the peritonitis becomes localized and abdominal distention is present. The onset of the second group is characterized by symptoms so acute as to immediately overwhelm the patient.

American Review of Tuberculosis, Baltimore

September, 1920, 4, No. 7

Personal Experience and Value of Medical Society to Its Members. L. Brown, Trudeau, N. Y.—p. 481.
*Influence of Smallpox and Vaccination on Pulmonary Tuberculosis. H. J. Howk and W. E. Lawson, Mt. McGregor, N. Y.—p. 490.
*Problems in Differential Diagnosis of Pulmonary Tuberculosis. J. A. Miller, New York.—p. 502.
Diagnosis of Pulmonary Tuberculosis. F. H. Heise, Trudeau, N. Y.—p. 512.
*Importance of Physical Signs in Prognosis of Pulmonary Tuberculosis. F. B. Trudeau, Saranac Lake, N. Y.—p. 518.
*Investigation of Acid Fastness of Tubercle Bacilli. B. Suyenaga, Chicago.—p. 526.
*Artificial Heliotherapy in Pulmonary Tuberculosis. S. Simon, St. Louis.—p. 530.
*Influenza as Factor in Activation of Latent Tuberculosis. L. C. Boisliniere, St. Louis.—p. 534.
*Surgeon and Consumptive. E. A. Gray, Chicago.—p. 541.
*Silence in Treatment of Pulmonary Tuberculosis. S. W. Schaefer, Colorado Springs, Colo.—p. 546.

Vaccination, Smallpox and Tuberculosis.—This report is a record of an epidemic of smallpox occurring in a sanatorium in the autumn of 1914. Smallpox occurring in patients with pulmonary tuberculosis, runs a course not noticeably different from that encountered in well people. The symptomatology, appearances of exanthem, and duration of the smallpox, are not influenced by the presence of tuberculosis. In early, inactive cases of tuberculosis with favorable prognosis there is no apparent interruption of recovery when complicated by smallpox. In one active advanced case there was a disappearance of sputum and bacilli after smallpox, lasting for four months. In one very active advanced case there was a permanent disappearance of sputum and bacilli immediately after the smallpox. The disease was progressive up to the time of smallpox and retrogressive thereafter. The seven patients recovered from smallpox and six are alive and well at present. The presence of tuberculosis does not affect the normal course of vaccinia. Tuberculosis in any stage or any degree of activity was not affected by vaccination, either favorably or unfavorably.

Diagnosis of Pulmonary Tuberculosis.—Miller emphasizes the fact that methods of more or less scientific precision, such as tuberculin tests, sputum examinations, the roentgen ray and complement fixation reactions, indispensable as they are, frequently fail or even confuse the diagnostician, and that in the last analysis the diagnosis of pulmonary tuberculosis, as indeed most other internal diseases, depends mainly on the development of that clinical sense on the part of the physician, the pursuit of which constitutes much of the fascination of the practice of medicine; and further, that justice to patients and the profession alike demands that those who see a good deal of pulmonary disease should constantly keep in mind the not unlikely possibility that a thorough general examination may explain quite otherwise the suspicious symptoms which are apt to be ascribed solely to the lungs; and that certain definite physical signs in the chest may be susceptible of quite other interpretation than the temptingly obvious one of tuberculosis.

Results of Treatment of Tuberculosis at Trudeau.—In spite of the fact that practically 70 per cent. of the patients at Trudeau were discharged as "apparently arrested" or "quiescent," 44 per cent. showed an increase in their physical signs during their stay in the institution, 41 per cent. showed a decrease, while 16 per cent. remained stationary. Among the patients in whom the physical signs diminished one third more were well, one half less were dead, one ninth less of the deaths in which the causes were known were caused by tuberculosis, and there were about one fourth fewer relapses at the end of from five to eleven years than in the cases of those patients in whom signs increased. In regard to the arrested cases 68.3 per cent. are well, 19 per cent. are dead and 11.5 per cent. are living after a period of from five to eleven years after discharge, regardless of the change of physical signs. Of those with increased physical signs 63.6 per cent. are well, 22.7 per cent. are dead and 12.8 per cent. are living. Of those with decreased physical signs 71.1 per cent. are well, 18.6 per cent are dead and 8.8 per cent. are living, while those with stationary physical signs show 76.9 per cent. well, 6.2 per cent. dead and 15.4 per cent living. In dealing with all cases regardless of admission or discharge condition, and also of physical signs, 63.8 per cent. are well, 21.5 per cent. are dead and 13.3 per cent. are living after a period of from five to eleven years after discharge. In all cases, however, showing increased signs, 52.8 per cent. are well, 31.1 per cent. are dead, and 14.7 per cent. are living. Of those with decreased signs, 69.9 per cent. are well, 15.8 per cent. are dead and 12.8 per cent. are living, while, for the stationary cases, 77.9 per cent. are well, 10.1 per cent. are dead and 10.7 per cent. are living.

Acid Fastness of Tubercle Bacilli.—Since it has not proved possible by the the methods used, to separate an acid fast from a nonacid fast strain, Suyenaga regards it as probable that they are not distinct strains, either mutation or symbiotic. The question whether the nonacid fast forms may be degeneration forms has not been investigated. Gentian violet has a stronger bactericidal and inhibitory power than methylene blue over saprophytic acid fast and some gram-positive and

gram-negative organisms. **There is considerable difference** between the bactericidal and the inhibitory power of these antiseptic dyes. Of the acid fast bacilli, the less acid fast seem more susceptible to the action of gentian violet and methylene blue.

Value of Artificial Heliotherapy in Tuberculosis.—Observations from a purely clinical standpoint on about sixty patients lead Simon to believe that artificial heliotherapy holds out little hope as a curative agent in lung tuberculosis.

Measles and Influenza.—The investigations made by Boisliniere suggest what has been noted before, namely, a possible biologic and epidemiologic analogy between measles and influenza.

Surgeon and Consumptive.—The attention of the surgeon is called by Gray (1) to the importance of making, or having made, a careful examination of the chest in all cases preparatory to operation, (2) to the advisability of deferring operations (where possible) in all cases where the lung findings are suspicious, (3) to the fact that every patient presenting himself for operation for the relief of a tuberculous condition should be suspected of pulmonary tuberculosis until proved beyond question to be free from such disease. It is urged that acute pulmonary tuberculosis must be recognized as a possible sequel to operation unless the points above adduced are given their true value.

Value of Silence in Treatment of Tuberculosis.—"Silent bed cure" is advocated by Schaefer for patients with pulmonary lesions who have not made satisfactory progress on the ordinary regimen of rest and who are unsuitable for operative procedures; the alert talkative patient who although in bed exercises his lungs more than he would be in walking a short distance, and the nervous excitable patient in whom conversation is most apt to upset his central nervous system already impaired by the tuberculous toxin. With these ideas in mind, this treatment was tried in several moderately advanced cases with results which indicate the wisdom, even the need, of paying more attention to restricting the amount of talking in which patients are allowed to indulge. The great objection to the use of silence is its effect on the mental condition. On the other hand, the advantage of silence is not solely due to localized effect on the lung but also to the lessening of general bodily fatigue and the absence of mental excitement. The treatment requires the most careful supervision and encouragement of the patient by the physician; but if the physician has the absolute confidence of the patient, with the judicious use of psychotherapy and the improvement of the patient's condition apparent to him, the mental attitude will improve along with the physical condition.

Boston Medical and Surgical Journal

Oct. 14, 1920, **183**, No. 16

*Clinical Apparatus for Measuring Basal Metabolism. F. G. Benedict and W. E. Collins, Boston.—p. 449.
Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 458.
Improved Method in Treatment of Otitis Externa. J. Prenn, Boston.—p. 463.
Institutional Dentistry: Results, Report No. 4. F. A. Keyes, Boston.—p. 464.
Vincent's Angina—Stomatitis. J. E. Ganley, Brockton, Mass.—p. 466.

Apparatus for Measuring Basal Metabolism.—The portable respiration apparatus has been modified by Benedict and Collins, reduced in weight, and provided with support and stand so as to make it a strictly portable apparatus. Without gas analysis, without weighings of any kind, the oxygen consumption of patients may be studied by this apparatus in the customary ten and fifteen minute periods, with an accuracy fully equal to other standard methods of studying respiratory exchange. A simple method of timing the readings of the position of the spirometer bell eliminates the use of stop watches. Three series of comparison tests on two different subjects with widely varying basal oxygen requirements show that the most satisfactory results can be obtained.

Oct. 21, 1920, **183**, No. 17

*Trend of Modern Pediatric Teaching. L. W. Hill, Boston.—p. 473.
Acute Respiratory Infections at Boston City Hospital: Pneumonia Service. E. A. Locke, H. M. Thomas and D. O'Hara, Boston.—p. 480.
Intracistern Injections of Arsphenamized Serum in Neurosyphilis. H. McCusker, Providence, R. I.—p. 490.
Orchitis in Mumps. C. Wesselhoeft, Boston.—p. 491.

Trend of Pediatric Teaching.—The points dealt with by Hill are: the relation of the laboratory to practice; the didactic lecture; the necessity of teaching fundamentals in infant feeding; infant welfare; the graduate student; and the necessity of a good general education for student. Hill states that the standards for admission to the medical schools even now are none too high; in the past they were deplorably low, and immature young doctors were being turned out wholesale, who did not have even the rudiments of a general education. The purpose of college training is to teach the student how to think originally, how to appreciate facts in their proper proportion, to distinguish the essential from the nonessential, to have a wide vision instead of a narrow one.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1920, **16**, No. 3

*Influence of Diuresis on Elimination of Urea, Creatinin and Chlorids. E. K. Marshall, Jr., Baltimore.—p. 141.
*Influence of Saccharin on Catalases of Blood. F. C. Becht, Chicago.—p. 155.
*Quantitative Studies in Chemotherapy III. Oxidation of Arsphenamin. C. Voegtlin and H. W. Smith, Washington, D. C.—p. 199.
*Effect of Opium Alkaloids on Behavior of Rats in Circular Maze. D. I. Macht and C. F. Mora, Baltimore.—p. 219.
Comparison of Effect of Certain Saponins on Surface Tension of Water with Their Hemolytic Power. H. E. Woodward and C. L. Alsberg, Washington, D. C.—p. 237.

Influence of Diuresis on Elimination of Creatinin, Urea and Chlorids.—The effect of the ingestion of large quantities of water (water diuresis) on the elimination of creatinin, urea and chlorid was studied by Marshall in normal men and dogs. The urine volume is frequently increased twenty-fold or more; creatinin is not increased to a measurable extent; urea is increased definitely but never more than two-fold; chlorids are apparently increased but the increase is variable and generally less marked than that of urea. The increases in urea and chlorid do not correspond with the maximum increase in water excretion, in fact at the height of the diuresis the chlorid elimination generally decreases. During water diuresis, the chlorid of the plasma may decrease, while the concentrations of urea and creatinin in the plasma do not vary appreciably.

Influence of Saccharin on Blood Catalases.—The effect of saccharin on processes of oxidation, particularly diabetes was studied by Becht. Four grams of saccharin per kilogram of body weight did not increase the catalytic power of the blood of cats when the drug was injected into the gastro-intestinal canal. Wide variations in the catalytic power of the blood were noted in two dogs studied over a period of seventy-three to ninety-one days. Saccharin in doses of 4 grams per kilogram acts as a powerful gastro-intestinal irritant producing in most cases vomiting and in many cases diarrhea. Saccharin intravenously produced in practically every case a marked decrease in the catalase content of the blood probably due to the direct action of the drug on the cells of the blood by alteration of the number of red cells per unit volume of the blood. Removal of the pancreas had no specific influence on the catalase content of the blood. The action of saccharin is the same in the animal with pancreatic diabetes as in the normal animal. An increase was observed in the catalytic power of the blood in 80 per cent. of observations of patients with diabetes mellitus. Since the dose was small and since there were relatively few cases, it is believed that this is of no significance.

Oxidation of Arsphenamin.—It is stated by Voegtlin and Smith that the sodium salts of the following arsenicals are relatively very stable toward atmospheric oxygen: arsenious acid, methyl and ethyl arenious oxid, phenyl and diaphenylarsenious oxid p-amino phenylarsenious oxid. Arsphenamin (dihydrochlorid), contrary to the prevalent views, is exceedingly stable toward atmospheric oxygen. The addition of alkali leads to a rapid increase in the rate of oxidation of the compound, the rate of oxidation being roughly inversely proportionate to the hydroxylion concentration. The sodium salt of arsphenamin is first oxidized to the corresponding oxid and this compound is simultaneously oxidized to the pentavalent arsenical. The relative concentration of unchanged arsphenamin and oxid depends on the rate of reac-

tion. The slower the reaction, the more oxid is formed, but in every case, the last portion to be oxidized consists of 50 per cent. arsphenamin and 50 per cent. oxid. M-amino-p-oxyphenylarsenious oxid ("arsenoxid") is oxidized only in alkaline solution. The nature of the process curve indicates that the reaction is catalyzed by a reaction product. Neo-arsphenamin shows a rapid oxidation on exposure to air, amounting to about 50 per cent. in the first ten minutes, after which the rate decreases rapidly. The nature and rate of oxidation of arsphenamin and neo-arsphenamin to the corresponding oxids furnish an explanation of the increase in toxicity and trypanocidal activity of these compounds, when their solutions are exposed to air.

Effect of Opium Alkaloids on Rats.—The behavior of albino rats before and after injections of opiates was studied by Macht and Mora in the circular maze. It was found that morphin produced a depressant effect on the behavior of the animal, after both large and small doses, but that in the case of one animal the drug exhibited a stimulating effect. Of the other opium alkaloids, with the exception of papaverin, all were found to be slightly depressant. Combinations of morphin with other opium alkaloids are, on the whole, somewhat less depressant than equivalent doses of morphin when given alone. In all the experiments, even where large doses of the narcotics were administered, and marked and prolonged impairment of the psychological functions was produced the animals eventually recovered their activity.

Medical Record, New York

Oct. 16, 1920, **98**, No. 16

Organ Therapy in Thyroid and Allied Disorders. J. Rogers, New York.—p. 631.
State Medicine and Poetic Doctor. J. J. A. O'Reilly, Brooklyn.—p. 639.
Kidney and Ureteral Surgery. D. N. Eisendrath, Chicago.—p. 645.
Individual Factor in Disease. F. M. Pottenger, Monrovia, Calif.—p. 647.
Vividiffusion with Intestinal Membranes. G. R. Love, Chicago.—p. 649.

New York Medical Journal

Oct. 23, 1920, **112**, No. 17

*National Health Problems. H. S. Cumming, Washington, D. C.—p. 609.
Eugen Steinach's Work on Rejuvenation. A. Grant, New York.—p. 612.
Hemorrhoidectomy. E. J. Clemons, Los Angeles, Calif.—p. 613.
Gunshot Injuries of Chest in Civil Practice. G. P. Müller, Philadelphia.—p. 614.
Futility of Examining Filtrate for Presence of Occult Blood in Gastric Contents. A. A. Ritz, Brooklyn.—p. 619.
Filing Conveniences Suitable for Physicians. J. M. Taylor, Philadelphia.—p. 620.
Diagnosis of Chronic Conditions by Spinal Reflex System. A. C. Geyser, New York.—p. 621.
Heredity. L. D. McEvoy, New York.—p. 628.
Intestinal Symptoms in Malaria. C. G. Cumston, Geneva, Switzerland.—p. 632.

National Health Problems.—The rational and business-like method of disease prevention, Cummings says, should begin at the bedside of the first patient or before and not wait until it reaches epidemic proportions. Applying such a business principle would make it imperative that the national, state and local health agencies work together—form a joint partnership, and each bear its proper share in the work and expense. If Congress should recognize this principle and authorize such a partnership, the amounts now spent in the cooperation with the states would have to be greatly increased and a plan or organization would have to be carefully worked out so that each party to the partnership would meet the obligations and expeditures according to their respective responsibility. The Public Health Service, owing to its size and present position in the field of health protection, would constitute the foundation on which to build the federal health agency in such a partnership. The other federal agencies now authorized by Congress to perform certain health functions would necessarily have to be brought into the organization and their work correlated with that of the Public Health Service, in order to constitute a smooth working machine. In state and local organizations, where there are several legally authorized agencies performing health functions, these would have to be brought together and their work also correlated. In the formation of a partnership of this kind volunteer health agencies now organized and working in the field of preventive medicine should be recognized and made a part of the machinery, but it should distinctly be understood that such agencies are auxillary to legally constituted health agencies. However, they could be utilized to great advantage in this partnership owing to the elasticity of organization and the possibility of utilizing funds for work not authorized by law. But in the end these volunteer agencies should be brought under either federal, state or local laws and form a legal part of the health machinery. The control of disease is a governmental function and in a democratic government all agencies should finally come under authorized legal authorities, otherwise our government would fail to be a democracy and would be subject to control by volunteer agencies who are not directly responsible to the people.

Porto Rico Medical Association Bulletin, San Jaun

September, 1920, **14**, No. 127

*Differential Diagnosis of Tropical Pyrexias Most Commonly Encountered in Porto Rico. A. Torregrosa.—p. 67. Cont'n.
*Sprue or Psilotic Moniliasis. F. del Valle Atiles.—p. 103.
*Rhythm and Melody in Therapeutic Physical Exercises. P. Briganti.—p 106

Differential Diagnosis of Tropical Pyrexias.—In this instalment of his long article Torregrosa discusses malaria and sepsis of internal or external origin, malaria and syphilis, malaria and glandular or blood disease, chorosis and pernicious anemia. He warns that the anemia of malaria may simulate in every respect an ordinary pernicious anemia, even in the blood picture, and cites some instructive cases.

Sprue or Moniliasis.—Del Valle Atiles cites some recent authorities to the effect that this form of oidiomycosis is not restricted to tropical regions, and that it may incapacitate as much as hookworm or pellagra. Ashford has isolated the monilia from imperfectly baked bread and bread made with fermented grains, which points the way to effectual prophylaxis against moniliasis. The deviation of complement tests allows detection of moniliasis even in incipient and atypical cases, and thus permits treatment before the mycosis has done irreparable damage. Atiles suggests a possible connection between the disease and alveolar pyorrhea; the pyorrhea may, at least, provide conditions favorable for development of the disease. At the same time, the connection cannot be very close, as pyorrhea is common in countries where moniliasis does not prevail.

Rhythm and Melody in Physical Exercises.—Briganti declares that drugs have usurped too much space in treatment, taking up space that belongs to light, electricity, music, etc. There are certain morbid conditions which yield only to systematic exercise. Locomotor ataxia is one of them, and the treatment of this can proceed much more effectually if the exercises are done to music. This is particularly evident in the condition which he calls potential ataxia. The therapeutic exercises can be done with the aid of a phonograph and written directions. There is a rhythm in our bodily functions, and by rhythmically influencing the movements of the limbs we react on the brain, and the body automatically strives to conform to the rhythm. Physical exercises aid in increasing the production of heat and in distributing it. His outline of treatment is first deep breathing, then physical relaxation, then functional exercises, with or without massage, then a sponge bath, and then repose, all accompanied by a musical rhythm.

Rhode Island Medical Journal, Providence

October, 1920, **3**, No. 10

Lethargic Encephalitis. C. A. McDonald, Providence.—p. 191.

Surgery, Gynecology and Obstetrics, Chicago

October, 1920, **31**, No 4

*Leukoplakia of Bladder and Ureter. Report of Case. H. L. Kretschmer, Chicago.—p. 325.
*Diagnosis and Treatment of Hydrocephalus Resulting from Strictures of Aqueduct of Sylvius. W. E. Dandy, Baltimore.—p. 340.
*Compression Fracture of Vertebral Bodies with Delayed Symptoms (Kuemmel's Disease); Report of Seven Cases. R. H. Baker, Ann Arbor, Mich.—p. 359.
Pre-Operative Preparation of Diabetic Patients and Their Subsequent Treatment. M. Kahn, New York.—p. 363.
*Pathology of Knee Joint in Relation to Roentgen-Ray Findings. S. C. Woldenberg, Iowa City.—p. 366.
Case of Fibromyoma of Mesentery. E. S. Judd and J. R. McVay, Rochester, Minn.—p. 372.

Diverticula of Duodenum; Clinical and Roentgenologic Recognition. L. G. Cole and D. Roberts, New York.—p. 376.
Functional Menstrual Disturbances. F. L. Meredith, New York.—p. 382.
*Calcified Tubal Mole. J. P. Maxwell, Peking, China.—p. 388.
Cruveilhier's "Tumeurs Perlees' Report of Two Cases. P. Bailey, Boston.—p. 390.
Inguinal Hernia. D. Foldes, Cleveland.—p. 402.
Three-Forceps and Four-Forceps Knot. R. E. Farr, Minneapolis.—p. 408.
*Use of Double Thread in Surgical Work. K. H. Digby, Hong Kong, China.—p. 410.
Correct Rhinoplasty. L. Cohen, Baltimore.—p. 412.
Steel Ball Bearing in Esophagus. A. L. Blesh, Oklahoma City.—p. 416.
*Removal of Missile from Right Ventricle of Heart with Recovery. W. H. Luckett, New York.—p. 417.

Leukoplakia of Bladder.—While there is no symptom or syndrome by means of which this condition can be diagnosed, Kretschmer says the presence of large quantities of sequamous epithelial cells in the urine from the bladder, or from the kidney after ureteral catheterization, and the passage of pieces of membrane or flakes of squamous epithelial cells, are very valuable findings in making the diagnosis of leukoplakia. By means of careful cystoscopic examination leukoplakia of the bladder can definitely be recognized. He reports a case in which the bladder lesion was recognized but the ureteral involvement was discovered on postmortem examination.

Obstruction of Aqueduct of Sylvius Cause of Congenital Hydrocephalus.—Twenty-five aditional cases of hydrocephalus; ten of the communicating and fifteen of the obstructive type are put on record by Dandy. Cicatricial stenosis of the aqueduct of Sylvius is the most frequent lesion in congential hydrocephlus (about 50 per cent.), and is found in a large percentage of cases of hydrocephalus occurring in infancy and early childhood. It may occur (though rarely) in adult life. Hydrocephalus always follows occulsion of the aqueduct. The third and both lateral ventricles progressively dilate. The fourth ventricle, being posterior to the obstruction, does not enlarge. In the gross, the occluded aqueduct appears to be replaced by a fibrous tissue which microscopically is neuroglia. Microscopic remnants of the aqueduct are usually but not invariably found. The stenosis may occupy the entire length of the aqueduct, or varying parts; it may be only a thin, even transparent membrane. Again, the stricture may be only partial. Strictures of the aqueduct of Sylvius can be diagnosed and accurately localized. The indigocarmin test will indicate that an obstruction is present; ventriculography will be the means of precisely locating the obstruction. Spontaneous relief is not possible. Surgical attempts to drain the fluid from the third ventricle to the exterior of the brain have all proved futile. The openings invariably close and the fluid cannot absorb in the subdural space. A surgical procedure is suggested which is directed toward the cause. A new aqueduct of Sylvius is constructed; a tube is left in place for two to three weeks. This operation has been performed in two cases, both patients recovering from the operation. One patient died of pneumonia several weeks later, the second seems well one year after the operation.

Compression Fracture of Vertebra.—Baker presents the theory that there is a type of compression fracture of the spinal bodies which is apparently benign at first and gives no roentgen-ray evidence of a bony lesion, but in which, at some later period, definite bony changes develop, and the diagnosis can be easily made by certain distinctive signs, including the typical roentgen-ray picture.

Roentgen Ray in Diagnosis of Knee Joint Conditions.—Woldenberg cautions that the roentgen-ray findings are only an aid in making a differential diagnosis between the different bone conditions, and that it should be used only as a corroborative agent in making a positive diagnosis of bone and joint conditions.

Calcified Tubal Mole.—The specimen described by Maxwell he thinks was probably one of an ampullary pregnancy which was transformed into a tubal mole. The omentum became adherent, preventing the occurrence of a tubal abortion, and the whole mass became subsequently calcified. Questioning could not elicit any light as to the date of the tubal pregnacy.

Double Thread Suture.—Digby advocates the use of double thread as another means of facilitating and expediting the procedures in "no hand touch" technic.

Removal of Missile from Heart.—In the case cited by Luckett an incision three-fourths inch long and about one-fourth inch deep was made through the wall of the right ventricle down to the apex of the missile which was grasped by an artery clamp and extracted. The incision into the heart bled only scantily until the missile was extracted when it was followed by a profuse hemorrhage, spurting with each cardiac impulse. Three deep catgut suture were placed in the heart to close the wound, and Allis clamps were removed when the upper angle of the wound bled freely. This was controlled by a fourth sature in the heart. The pericardial cavity was sponged of all blood. The pericardium was closed by catgut sutures, a small opening being left at the lower angle of wound for drainage into pleural cavity. Thoractomy wound was closed without drainage. The patient left the operating table in most excellent condition and eventually made a good recovery.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

September, 1920, **25**, No. 4

*Intensive Roentgen-Ray Therapy versus Hysterectomy for Fibromyoma of Uterus. L. Martindale.—p. 97.
*Rare Fracture of Elbow Joint. Jules F. Rey.—p. 109.

Roentgen-Ray Therapy of Uterine Fibroids.—Of 118 patients with uterine fibroids under Martindale's care since 1914, twenty-five were either untreated or treated by medical means alone; in the remaining ninety-three cases he performed hysterectomy in forty-seven, myomectomy in four and used intensive roentgen-ray therapy in thirty-seven. In five cases hysterectomy was performed after roentgen-ray treatment. In 39 per cent. of cases, therefore, of uterine fibroids requiring treatment Martindale definitely chose radiotherapy, but in examining the cases in which he performed hysterectomy, he found that no fewer than six out of the forty-seven would have been just as satisfactorily treated by the roentgen rays, making, therefore, the probable percentage in which radiotherapy could be employed satisfactorily as 46 per cent.

Fracture of Lower Humerus Epiphysis.—A man fell heavily on a hard floor, striking the point of his left elbow, the arm being flexed at about 90 degrees. On screening the elbow joint a fracture of the lower end of the humerus was seen. The articular surface of the humerus was found to be entirely free and lying in front of the lower end of the shaft. It consisted of nearly the whole trochlea, and the whole of the articular surface of the capitellum. It was impossible to fix it into position by wire, screw or plate, without interfering with its articular surface. Therefore, it was removed and the incision closed confidence being felt that good movement without instability could be obtained by careful, early and persevering active and passive movements. These were commenced about the third day after the operation, increasing in range and activity daily. Later, massage and ionization were vigorously applied. The range of movement both as regards flexion and extension, is already very good and pronation and supination are perfect. Moreover, the joint is practically stable and without any lateral mobility at the elbow.

British Medical Journal, London

Oct. 2, 1920, **2**, No. 3118

Diagnosis of Nervous Disorders of Stomach and Intestine. A. F. Hurst.—p. 499.
*Subacute Perinephric Abscess of Nonrenal Origin. Z. Cope.—p. 509.
*Menstruation During School Life. A. E. S. Clow.—p. 511.
*Place of Muscle Re-Education in Treatment of Anterior Poliomyelitis (Infantile Paralysis). C. Mackay.—p. 513.
Acute Intestinal Obstruction Caused by a Herniation of Small Intestine into Paraduodenal Fossa. B. Hughes.—p. 515.
*Case of Extra-uterine Fetation Presenting in Vagina. A. E. Joscelyne.—p. 516.
Case of Urinary Sinuses. P. McRitchie.—p. 516.

Abscesses of Nonrenal Origin.—A case of bilateral perinephric abscess is reported by Cope and a summary is given of thirteen cases of retroperitoneal perinephric abscess of nonrenal origin.

Menstruation and Education.—The menstrual function of 1,200 healthy girls was made the subject of analytical study by Clow. Seventy-three per cent. of the girls were free from any disturbance whatever. Only four girls had the spasmodic type of dysmenorrhea. There was one case of intermenstrual pain or "mittelschmerz." School work did not seem to have any ill effect on the menstrual function. Clow advocates the practice of taking baths, and more especially exercise, during the menstrual period to reduce the number of those suffering from the congestive forms of dysmenorrhea and constipation.

Muscle Reeducation in Infantile Paralysis.—Mackay claims that each and every child surviving the first onslaught of infantile paralysis can be assisted to regain muscle power; a few may remain permanent cripples, in spite of every care, but if treatment is begun at once and properly carried out the majority should recover more or less completely. The paralysis is not the disease; it is the obvious sequel. Aim in treatment is, therefore, not the cure of the disease but the restoration of function; this must be begun at once, before postural defects have occurred, or fibrous changes in the essential structures have taken place. Rest must be given immediately; muscle reeducation should be attempted as soon as the inflammatory process has ceased, which may be at the end of the first week. The three cardinal points of treatment are: (1) anatomic rest; (2) muscle reeducation; (3) general care of the patient, particularly as regards warmth of the limbs, light massage for a short period preliminary to the exercises, careful superintendence of the whole life of the child, and the avoidance of fatigue and strain.

Extra-Uterine Vaginal Fetation.—In Joscelyne's case the patient was about five months pregnant. The fetation was in the vagina. The uterus was little, if at all, enlarged to the left of the presenting mass, and distinctly separable from it. The fetus had evidently been dead some time. The placenta was removed with some little difficulty, leaving a large ragged hole in the right vaginal fornix. There was a little hemorrhage, and the patient made a good recovery. Joscelyne believes this to have been a case of extra-uterine fetation which developed and came down between the layers of the broad ligament.

Oct. 9, 1920, **2**, No. 3119

Treatment of Uterine Fibroids by Radiation. R. Knox.—p. 535.
Advantages and Disadvantages of Roentgen-Ray Treatment of Uterine Fibroids. H. Williamson.—p. 537.
Treatment of Uterine Fibromyoma by Intensive Roentgen-Ray Therapy; Thirty-Seven Cases. L. Martindale.—p. 538.
Radiology in Gynecologic Practice. C. Lockyer.—p. 539.
Clinical Manifestations of Mobile Proximal Colon. J. Morley.—p. 542.
*Case of Hepatic Cirrhosis Allied to Hanot's Disease. H. Rolleston and S. Wyard.—p. 544.
*Influence of Overcooking Vegetables in Causing Scurvy Among Children. H. Chick and E. J. Dalyell.—p. 546.
*Two Carcinoma Patients Alive Eight Years After Radium Treatment. E. S. Moyneux.—p. 548.
*Sodium Biborate in Treatment of Epilepsy in an Asylum. J. McCartney.—p. 548.
Labor Complicated by Marked Elongation of Supravaginal Cervix. E. F. Murray.—p. 549.
*Volvulus of Whole Small Intestine. C. M. Billington.—p. 549.

Hepatic Cirrhosis Allied to Hanot's Disease.—The main clinical features of the case cited by Rolleston and Wyard were a large liver and spleen, jaundice, fever, chronicity and absence of ascites until late in the course of the disease, symptoms strongly suggestive of Hanot's hypertrophic biliary cirrhosis, and histologically the unilobular and intralobular cirrhosis approached the changes described as characteristic of that disease. But both clinically and histologically there was a want of prominence of the biliary element. The jaundice was slight until late in the course of the disease; but, as it was present throughout, Rolleston and Wyard say the case cannot be regarded as one of the anicteric hypertrophic biliary cirrhosis described by the French. Then histologically evidence of biliary stasis, such as bile thrombi in the intralobular bile canaliculi or pigmentation of the hepatic cells, was extremely slight, and there was no inflammation of the small bile ducts. The type of cirrhosis corresponds fairly closely with that produced experimentally by Rous and Larimore. The patient was 11 years of age. The onset of his trouble dated back to an attack of influenza seven months before death.

Overcooking Vegetables Causes Scurvy.—An outbreak of scurvy is reported by Chick and Dalyell which affected forty children out of sixty-four, aged between 6 and 14 years, under treatment for tuberculosis. From September, 1918, to February, 1919, a good supply of fresh vegetables and milk was available. From the middle of February to the middle of April the daily ration of fresh vegetables was reduced to about 80 gm. per head; deprivation was never complete. The eight weeks' period of shortage preceding the outbreak is a much shorter period than the four to six months noted by other observers as necessary for the development of scurvy. It is concluded that though the supply of fresh food was adequate, the diet was nevertheless a scurvy producing one, and that the period of deprivation of antiscorbutic was longer than it appeared to be. An explanation is found in the method for cooking food employed in the hospital which involves a serious destruction of antiscorbutic. Suggestions are made as to means of preventing this. The germination of dry peas, beans, and lentils before cooking is strongly recommended as a means of providing extra antiscorbutic when fresh vegetables and fruit are scarce or absent. It is suggested that abnormally rapid growth may promote the development of scurvy in children.

Radium Treatment of Inoperable Carcinoma.—The two cases reported by Molyneux were a carcinoma of the pharynx, quite beyond operative interference, and a scirrhus cancer of the breast. The first patient, a male, now 69 years old, is in excellent health, and able to lead a busy life. The second patient, a woman, now aged 68, was quite well until lately when symptoms suggestive of a recurrence in the lungs and liver appeared.

Sodium Biborate in Epilepsy.—McCartney reports good results from the use of a mixture containing potassium bromid and sodium biborate in the treatment of epilepsy. The total number of patients in whom the treatment has been tried is forty-two; in all there is a marked improvement in the mental state of the patients, and in all except one the number of fits has been reduced. In addition to the marked mental change and lessening of the fits, other points noticeable are the great reduction in the amount of sedative used, and the marked diminution in the number of accidents which occur. The dosage is not given by McCartney.

Volvulus of Whole Small Intestine.—A weakly boy, aged 18, was admitted to hospital in a dying condition. On the previous afternoon he had eaten fish, followed by ice cream, and had then played football. At 6 p. m. he complained of a dull ache in the epigastrium and of nausea; he went to stool, but with what result is unknown. Hot fomentations were given through the night, but the pain grew worse; he was moved to hospital at 8:30 a. m., and died half an hour later. At the necropsy it was found that the whole of the small intestine from the first free loop of the jejunum to the ileocecal junction was strangulated by one and a half complete twists of the mesentery. There was collapse of the whole of the large bowel, and the small bowel was plum colored and distended; there was free blood in the lumen of the bowel and in the peritoneal cavity. No Meckel's diverticulum nor other anomaly could be found as an exciting cause. Billington suggests that the twist may have been of developmental origin, and was aggravated to strangulation by some sudden congestion (caused perhaps by injudicious dietary).

Indian Medical Gazette, Calcutta

September, 1920, **55**, No. 9

Midwifery Mechanics. A. Buchanan.—p. 321.
Lethargic Encephalitis. A. B. de Castro.—p. 325.
Analysis of Cases of Genital Chancer in Native Male. P. H. Hennessy.—p. 327.
*Treatment of Tubercular Affections of Enclosed Cavities, Abscesses and Caries, by Inflation with Oxygen. E. R. Rost.—p. 329.
Treatment of Cerebrospinal Meningitis by Spinal Irrigation with Electrargol. U. N. Brahmachari.—p. 332.
Notes on Novarsenobillon. R. M. Bose.—p. 334.

Treatment of Enclosed Tuberculous Lesions by Oxygen.—This method has been used successfully by Rost in the treatment of tuberculous joints, psoas abscess and tuberculous peritonitis. In the case of joints, for instance, the joint is drained of fluid by puncture, iodin solution—1 dram to the

pint—is run through, and the joint is then inflated with oxygen. Only one treatment has been necessary in these cases. The joint is then apparently normal, and functioning. In cases of tuberculous peritonitis, the peritoneal cavity is filled with oxygen. Psoas abscess sinuses are injected with oxygen twice daily. Full details of the treatment are given.

International Journal of Psycho-Analysis, Vienna

1920, **1**, No. 1

One of Difficulties of Psychoanalysis. S. Freud.—p. 17.
Character and Married Life of Henry VIII. I. C. Flugel.—p. 24.
Freud's Psychology. D. Bryan.—p. 56.

Lancet, London

Oct. 9, 1920, **2**, No. 2

*Medical Research and Education. S. Vincent.—p. 729.
*Science and Art of Medicine. G. Adami.—p. 732.
*Value and Interpretation of Some Physical Measurements. C. B. Heald and B. Thompson.—p. 736.
Induction of Premature Labor: Its Scope and Present Results. J. Phillips.—p. 741.
*Duration of Ventricular Systole. J. Cowan and W. T. Ritchie.—p. 743.
*Case of Cardiac Ball Thrombus. G. D. Mathewson and A. Rutherford.—p. 745.
Orbital Cellulitis. A. L. McMillan.—p. 746.
Case of Nonfatal Rupture of Aneurysm of Descending Aorta. S. R. Tattersall.—p. 748.
Incidence of Ascites and Edema in Malaria. J. I. Enright.—p. 748.
Case of Heat Stroke with Hyperpyrexia (106.4 F.). E. S. Pattison.—p. 749.

Problems in Medical Education.—The fallacy of so-called "practical" methods is brought out by Vincent. He says, that if by a "practical man" we mean a doctor who is equipped by his training to apply promptly and efficiently such treatment as may be the best for his patient, then, of course, "the practical man" is the best kind of man. But it is his firm conviction that such practitioners can only be turned out by medical schools if the education given is of the broadest and most generous type, and if the true scientific spirit is instilled into students, so that they shall always regard their cases as problems, to the solution of which they are to give their utmost skill and energy, employing their mental tools as they have been trained to use them in their scientific studies. The relation of lectures to laboratory work is also discussed. In the majority of subjects in the curriculum, Vincent says, a short introductory course of about forty lectures is all that is necessary or desirable. Advanced students should have the privilege of attending short special courses delivered by the staff or investigators on subjects to which the lecturers have devoted special attention. The time devoted to laboratory work should be considerably increased and the lectures ought to be to a large extent explanatory of the laboratory courses. Great improvement would result if medical teachers could be induced to study more carefully their educational methods. Separate research chairs and research departments or institutions are, in Vincent's opinion, unless in quite exceptional cases, undesirable. Elasticity in the medical course is advocated, because it is the only practicable method of relieving the strain. A matter which requires very serious consideration at the hands of the authorities of medical schools in Vincent's opinion is the desirability or otherwise of a more careful selection of students and of some method of eliminating altogether those who prove unsatisfactory. The greatest hindrance to progress in medical education has always been, and still continues to be, the difficulty in finding money to defray the expense of buildings and laboratory equipment, to say nothing of the salaries of teachers. The director of a university laboratory is indeed supremely lucky if his place of work is as well adapted for its purposes as a bank, a departmental store, or a hotel kitchen. The reason of this deplorable condition is clearly to be sought in the lack of interest in and appreciation of scientific work on the part of the general public and the reflection of this state of affairs in the attitude of governments. In regard to medical education, the public has never realized that efficient training of doctors is absolutely dependent on a sound scientific education. And this is, perhaps, not to be wondered at, since medical men themselves have not always held the most enlightened views on the subject. There has been a partial awakening, but poverty-striken universities still stand as a sign that everything has yet to be done. State support to the universities should be generous and complete. Teachers should be well paid and laboratories well endowed.

Importance of Pathology in Medicine.—The present financial straits of universities, the drawbacks of government control, the development of the unit system, the dangers of specialization are some of the topics discussed by Adami. He urges that the department of pathology be adopted as the guiding center with a parallel department of therapeutics and pharmacology, and a laboratory of experimental medicine and surgery. It is the hospitals and the living, and an intimate knowledge and comparison of symptoms in the living with the findings in the postmortem room, that keep pathology a live subject, and today certainly it is the problems of infectious disease that are most fertile. Pathology is the whole scientific investigation of disease, not merely the restricted field of the study of dead tissues—the gross and minute morbid anatomy. It is with this wider conception that an institute of pathology should become the center for scientific research in connection with the wards and the individual patient. Once this institute of pathology or institute of the science of medicine takes its right place in the school in closest association with the hospital and with every department of that hospital; once the staff become accustomed to turn to it for the solution of their problems, then surely, with all the junior members of the staff trained in that institute, within ten years the whole staff will be animated and leavened with the spirit of the science, over and above but not excluding or even damaging, the spirit of the art of medicine. That is the true education.

Physical Measurements.—Heald and Thomson report on an investigation made with the object of finding some method by which the Dreyer and Flack tests could be brought into agreement, as both sets of measurements were considered to give information of great value as to the physical condition of the respiratory organs. Each set of measurements has been formed into a product, and a graphical method of combining the two products into a single numerical result has been developed.

Prolonged Ventricular Systole and Heart Block.—The cardinal feature of the analysis presented by Cowan and Ritchie is the association of prolonged duration of ventricular systole with heart block. The authors do not imagine that a lesion in the vicinity of the bundle is the cause of the prolongation, but rather that lesions of similar type to those which obtain in the vicinity of the bundle, occurring elsewhere and diffusely, may be the cause. Evidence of a progressive lesion of the myocardium is sometimes forthcoming in these cases and one such case is cited. On admission of the patient signs of cardiac failure were distinct, and as time went on became more extreme, though neither the frequency nor the severity of the attacks increased. With increasing signs of cardiac insufficiency the electrocardiographic evidence pointed to the spread of the fibrosis from the main bundle to the branches, and presumably into the ventricular muscle as well.

Cardiac Ball Thrombus.—Mathewson and Rutherford cite the case of a woman, aged 49, who complained of shortness of breath and of giddiness occurring mainly on exertion, but occasionally while at rest. These symptoms had troubled her for an indefinite period, but had been more pronounced since an attack of pneumonia two months before admission. There was no history of rheumatism of infective disease other than the pneumonia, but she had suffered from epileptic fits for seventeen years. The pulse rate at the wrist was from 60 to 70 per minute with complete irregularity and great variation in the strength of the beats. A short systolic murmur was audible at the apex and over the lower part of the sternum, and at the apex a short diastolic murmur immediately following the second sound could be heard at times. The second pulmonary sound was accentuated. The patient suddenly became deeply cyanosed, drew a few gasping breaths, and died immediately. The necropsy disclosed mitral stenosis; early interstitial myocarditis; thrombosis in left auricle and free ball thrombus; arteriosclerotic kidneys; chronic venous congestion of liver, spleen and lungs; infarctions of right lung with old and recent pleurisy.

Archives des Maladies du Cœur, etc., Paris

July, 1920, **13**, No. 7

Syphilitic Disease of the Heart. C. Oddo and C. Mattei.—p. 289.
Bradycardia of Convalescence. J. de Meyer.—p. 300.
Lymphoid Leukemia with Leukopeny. J. C. Mussio Fournier.—p. 307.

Bulletin Médical, Paris

July 31, 1920, **34**, No. 38. Malaria Number

Endemic Index of Malaria in French Colonies. P. Gouzien and M. Leger.—p. 677.
The Biologic Reactions in Malaria. F. Noc.—p. 682.
Prophylaxis of Malaria. F. Heckenroth.—p. 684.
Treatment of Blackwater Fever. Nogue.—p. 690.

Journal de Médecine de Bordeaux

Aug. 25, 1920, **91**, No. 16

*Cicatricial Deformity of Hands. W. Dubreuilh and Bardet.—p. 431.
Tuberculosis in Germany Since the War. J. Peyrot.—p. 434.
*Diagnosis of Acute Dysentery. R. Damade.—p. 438.

Cicatricial Deformity of Hands.—Dubreuilh and Bardet describe some cases of exceptional deformity of the hands from burns or tuberculous ulceration in childhood, and cite some literature on the subject. The use of the hands was not much hampered, the children learning to overcome the handicap in a most remarkable manner.

Diagnosis of Acute Dysentery.—Damade reiterates the necessity for prompt microscopic examination of the stools when symptoms suggesting acute dysentery develop in any one who has not been living in the tropics. This is especially important when several cases develop within a short period. Even if the Shiga bacillus is found, the search for the ameba should be continued, as this calls for emetin in addition.

Journal de Radiologie et d'Electrologie, Paris

June, 1920, **4**, No. 6

Management of Coolidge Tube. J. S. Shearer.—p. 241.
Radioactive Bodies in Mineral Waters. P. Loisel.—p. 247.
*Mishaps from Electricity; Rescue Work. M. D'Halluin.—p. 254.
Angiosarcoma of Clavicle. L. Mauguière.—p. 269.
Radiography of the Urinary System. J. Belot.—p. 271.

The Dangerous Heart Factor in Electric Accidents and Its Treatment.—D'Halluin's research on dogs has confirmed the importance of fibrillation as a most serious effect of exposure to an electric overcharge. The respiratory phenomena should be combatted by the classic measures, but the phenomena on the part of the heart, primary or secondary, call for immediate application of massage to the heart, although not with much hope of arresting the fibrillation by this means alone. But we have in intravenous injections of potassium chlorid, he continues, a simple means to combat this irregularity of the heart, applied in connection with massage. This drug is a poison for the heart muscle, but it becomes diluted in the blood stream. The fatal dose is 14 cg. per kg., if injected rapidly, but up to 33 cg. can be borne injected slowly. His practice in dogs is to inject a 5 per cent. solution into the jugular vein, in the dose of 4 c.c. per kilogram of weight. Instantaneously the fibrillation ceases. Continuing the massage of the heart for five minutes, ten minutes, or even longer, the heart begins to contract again. He asks "Why not apply to man this treatment which has proved so effectual on dogs?" Before he had learned of this efficacy of potassium chlorid he lost 63 per cent. of the dogs after inducing the fibrillation, the massage alone not being enough to resuscitate them, but after injection of the drug, he saved 65 per cent. even when the massage was not begun until ten or fifteen minutes after the arrest of the heart. He remarks that the desired effect would probably be realized with a proportionally much smaller amount than 4 c.c. per kg. This drug seems to combine the greatest potency with the least harmful action of the large number of measures he tested.

Médecine, Paris

September, 1920, **1**, No. 12. Biology Number

*Biologic Progress During the War. J. Gautrelet.—p. 709.
*Experimental Research on Antiseptics. C. Richet.—p. 719.
Physiologic Rôle of the Thymus. P. Portier.—p. 722.
*Biologic Test of Vitamins. G. Schæffer.—p. 728.
*The Individual Glycemia Threshold. H. Bierry.—p. 733.
The Circulation in the Forearm. H. Delaunay.—p. 737.
*Healing of Wounds. E. Fauré-Fremiet.—p. 743.
Laboratory Aid in Epidemic Meningitis. R. Legroux.—p. 746.
The Micromethods. A. Baudouin.—p. 751.
*Oxalic Autointoxication. E. Gautrelet.—p. 753.

Progress in Biology During the War.—Gautrelet remarks that the old question whether it is allowable to experiment on man seems ironical now when we consider how millions of men during the war spontaneously realized the widest, the most varied and the most tragic field of observation and experience that the imagination can conceive. The biologists, the chemists, the bacteriologists have cooperated with physicians and surgeons, all concentrating their energies on the one field and their concerted action has been fruitful of results especially in the line of preventive and curative vaccines, sterilization of water, detection of factitious disease, transplantations, grafts, aviation, war gassing, prostheses, parasitology, radiology and physiology. He specifies the leading advances in these different lines, and reports symposiums on traumatic shock, on carriers, and on antiseptics, held not long ago at the Société de Biologie.

Research on Antiseptics.—Richet describes personal research on different antiseptics, estimating their potency by their action on the lactic ferment in milk. The vitality and activity of the ferment can be measured easily and with precision. by the amount of lactose transformed, that is, of lactic acid produced. The most striking feature of the results was the amazing potency of extremely minute quantities of the antiseptics. Even as little as ten thousandths of a milligram to the liter is not without action. He recalls that the phenomena of fecundation and immunization occur with quantities so minute as to be beyond our measuring instruments. Another fact brought out by his research is that whenever an antiseptic (and probably also a drug taken internally), has proved successful, then is the moment to change to another. As soon as the bacteria have had their proliferation checked by the antiseptic, change to another will continue the checking work, while if the same antiseptic is continued, the bacteria rapidly adapt themselves to it. He announces as a guiding principle for all therapeutics, "Quand une médication a bien réussi, il faut l'abandonner et en adopter une autre."

We have seven excellent antiseptics at our disposal, he says, and nothing is easier than to use a different one for each day in the week, from phenol, sodium hypochlorite, tincture of iodin, silver nitrate, sodium fluorid and creosote to hydrogen dioxid. Another phenomenon brought out by his experiments is the strange irregularity in the action of certain antiseptics. When the same amount of milk is placed in a number of different tubes to ferment and conditions are made apparently identical in each, there will be a considerable variation in the amount of lactic acid produced in the different tubes. Sodium fluorid is the most regular in this respect, the yield in lactic acid being almost the same in the whole set of tubes, while mercuric chlorid sometimes exaggerates the fermentation and sometimes checks it completely.

Biologic Test of Vitamins.—Schaeffer advises testing the food in question by adding it to the J. C. Drummond test diet for white rats or white mice. On this diet the animals grow thin and finally succumb in forty or fifty days, but the addition of even 5 per cent. of a vitamin-containing food arrests the decline, and the animals begin to thrive with a suddenness actually amazing. He adds that the avitaminosis of young infants is the most common of all and is the hardest to differentiate. By this simple biologic test of the food the infant is getting, we can tell at once whether it is suitable for the infant or not. The Drummond diet comprises 18 per cent. purified casein; 56 per cent. purified dextrin; 3.7 per cent. of a synthetic saline mixture, and 20 per cent. chemically pure twice recrystallized lactose, with 2.3 per cent. agar.

Individual Threshold for Glycemia.—Bierry comments on the individual threshold for sugar in the blood and the important information to be derived from fluctuations in it. The glycemic index requires estimation not only of the free sugar in the blood but also of the sugar combined with the proteins of the different plasmas. The free sugar and the *sucre protéidique* persist in remarkably stable relative proportions and absolute amounts in the individual under like conditions. Variations in the proteid sugar are most instructive in chronic nephritis and diabetes, he remarks in conclusion.

Healing of Wounds.—Fauré-Fremiet describes the complex phenomena of the healing of a wound, saying that it never results in the integral reconstruction of lost tissue, but the tissue that forms may fully substitute it in shape, aspect and function, a useful equivalent.

Oxalic Autointoxication.—Gautrelet emphasizes the unsuspected frequency of the proteiform manifestations of oxalic acid poisoning in persons with sluggish metabolism. It is a poison for the nervous system which it affects like Indian hemp or morphin. It is a poison also for the blood. The excretion of calcium oxalate may simulate all the phases of pulmonary tuberculosis, and its deposits in the joints may be more painful than attacks of gout. It may irritate the bowel, and may cause obstruction by calculi, but its worst misdeeds are from potassium oxalate. This is a poison for the muscles which it tetanizes like curare. The microscope may reveal the calcium oxalate in the urine or its presence may be determined by the red tint when 5 drops of a saturated solution of sodium hypochlorite are added to 10 c.c. of urine with which have been mixed 5 drops of a 10 per cent. solution of manganese sulphate. The patients should refrain from all foods containing oxalic acid and from all that might generate it by incomplete metabolism, and they should take hydrochloric acid and sodium bicarbonate, as Gautrelet describes in detail.

Presse Médicale, Paris

Sept. 4, 1920, **28**, No. 63

Chemotherapy. A. Richaud.—p. 613.
*Acute Transverse Myelitis in Boy. A. d'Espine.—p. 617.
*Fat Embolism in Pneumonia. J. Catsaras.—p. 618.

Transverse Myelitis in Child.—The flaccid paralysis in the legs and sphincters was complete below a point two finger breadths above the umbilicus in the boy of 8. It had come on suddenly the fifth day of mild measles, and electric tests and the absence of pain excluded acute poliomyelitis and polyneuritis. Hexamethylenamin was given regularly for twelve days, 0.5 gm. daily, with a daily application of faradic electricity, and nearly normal conditions were restored in less than two weeks.

Fat Embolism in the Lungs in Influenzal Pneumonia.—Catsaras reports from Athens that he found fat embolism in the lungs in eighteen of sixty-seven cadavers. He theorizes to explain this that possibly the liver had been incapable of the normal transformation of the fat from the prolonged milk diet, and this was responsible for its passage unmodified into the circulation.

Schweizerische medizinische Wochenschrift, Basel

Aug. 26, 1920, **50**, No. 35

*Intraligamentary Ovarian Cysts. O. Beuttner.—p. 761.
*Localization of Psychic Functions. E. Fankhauser.—p. 767.
*Intra-Uterine Tuberculous Infection. M. Dubois.—p. 772.
Isolated Sprain of the Humeroradial Articulation and Epicondylitis: A Reply. J. Dubs.—p. 778.

Operative Treatment of Ovarian Cysts.—Beuttner discusses the technic for removal of ovarian cysts that have developed between the ligaments, reporting the details of twenty-nine such cases. He urges others to adopt his technic and not attempt to ligate and divide the utero-ovarian ligament as the first step. The first thing to be done is to detach the cyst from the uterus wall, eventually sacrificing the tube. Instead of incising the serosa over the highest point of the cyst he makes two incisions at the front and back, at the outer limit of the circumference of the cyst. In this way no time is lost in trying to detach the serosa from the top of the cyst as this portion of the serosa will have to be sacrificed if the cyst is large. All that is left to do is the enucleation of the lower half of the cyst. Ventral fixation of the uterus may be required not only to correct its position but also to stabilize the ligaments which may be stretched or otherwise injured by the cyst or operation.

Localisation of Psychic Functions.—Fankhauser places the brain at the peak of an equal-sided triangle of which the vegetative nervous system and the endocrine system form the other sides. He theorizes further that in a perception the impulse proceeds from the depths toward the surface, and on reaching the fourth of Meynert's six layers of ganglion cells, which form the cortex, the psychic elements come into play. This fourth layer is the connecting link between the recording apparatus and the mind.

Intra-Uterine Tuberculosis.—In Dubois' case the child showed an old tuberculous focus in the lung, and signs of miliary tuberculosis. It had died the fifty-fourth day after birth. Necropsy of the mother disclosed old tuberculous peritonitis and metritis; she had succumbed in forty-two days to acute miliary tuberculosis which had developed two days before the child was born.

Pediatria, Naples

Sept. 1, 1920, **28**, No. 17

*Pernicious Anemia in Children. E. Mensi.—p. 785.
*Diabetes Insipidus. I. Nasso.—p. 812.

Pernicious Anemia in Children.—Mensi gives details of 15 cases from the literature and cites others to a total of 29; 14 were infants and only 9 of the total 29 were girls. He has encountered 4 cases among the 3,029 children in his service. Of the 19 cases described in detail, 16 have died and the fate of 3 is unknown. Mensi's fourth patient, a girl of 15 months, is still living. The anemia was of the plastic type in the majority. The etiology is still obscure after excluding the few cases in which syphilis, tuberculosis or intestinal parasites can be incriminated.

Diabetes Insipidus.—Nasso's case in a girl of 8 is notable in that the output of water in the twenty-four hours surpassed the weight of the body. The child drank from 11 to 14 liters of water and voided from 12 to 15 liters of urine. Under pituitary treatment, marked improvement was observed, the output of urine dropping to 4 or 5 liters and the child being content with drinking 4 or 5 liters of fluid. The disease was of about four years' standing, and the child had been brought to the physician on account of a recent tendency to jaundice.

Policlinico, Rome

September, 1920, **27**, Medical Section No. 9

*Secondary Hemolytic Jaundice. A. Fagiuoli.—p. 317.
*Nature of So-Called Hemolytic Jaundice. L. Lenaz.—p. 337.
*Paroxysmal Hemoglobinuria. F. Schiassi.—p. 346. Cont'd.

Secondary Hemolytic Jaundice.—The symptoms of hemolytic jaundice developed in the course of pulmonary tuberculosis in the two cases reported by Fagiuoli. Only thirteen instances of hemolytic jaundice secondary to tuberculosis are known; it does not seem to differ in any respect from the primary form. The intermittent character of the secondary form may prove misleading if the patient is examined first during one of the remissions, the cause of the jaundice then escaping detection.

Pathogenesis of Hemolytic Jaundice.—Lenaz describes his conclusions from study of hemolytic jaundice in two women with their five children and one man and his son. His research demonstrated, he says, that the characteristic feature is the discordance between the presence in the blood of numerous nucleated corpuscles, such as we are accustomed to encounter only in grave anemia, and the lack of sufficient anemia to justify it. This discordance between the blood findings and the degree of anemia is encountered in adults only in this so-called hemolytic jaundice. The presence of megaloblasts without normoblasts and without anemia enough to explain them can be due only, he argues, to the persistence of the megaloblast-producing tissue which normally undergoes involution as the normoblast-producing tissue develops to take its place. This involution is completed soon after birth. The arrest of this involution is probably not the primary cause nor the essence of hemolytic jaundice, but it is the most evident sign of a general arrest in the evolution of the blood-producing organs. The persistence of one element throws the whole system out of gear.

Paroxysmal Hemoglobinuria.—Schiassi devotes ten pages to a description of various tests and experiences in a case of paroxysmal hemoglobinuria, brought on by chilling, in a woman of 24. The action of the cold seemed to induce a series of phenomena of the anaphylactic order, transient leukopeny followed by leukocytosis, reduction of coagulation

time, nausea, general malaise and fever. It also induced the phenomena of hemolysis. These two sets of phenomena could be elicited separately, according to the intensity of the chilling. If moderate, merely the first set of symptoms was induced, but if intense, the second set was induced likewise. The chilling acts as an antigen in bringing on the anaphylactic state.

Riforma Medica, Naples

July 24, 1920, **36**, No. 30

*Production of Bactericidal Substances by Vaccines. R. Paolucci.—p. 662.
*Familial Spondylosis. C. Castelli.—p. 663.
Scarlatiniform Eruption in Influenza. M. Gioseffi.—p. 668.
*Skin of Forearm in the Tuberculous. G. Gargiulo.—p. 669.

Production of Bactericidal Substances by Vaccines.—Paolucci has confirmed the phenomenon that when an emulsion of heat-killed bacteria is added to whole blood, the serum that separates out has decided bactericidal properties. They are not specific, as a staphylococcus vaccine proved equally bactericidal for the streptococcus and the typhoid bacillus.

Familial Rhisomelic Spondylosis.—Castelli reports the case of a man of 42 who since the age of 27 has had repeated attacks of severe pains in back, hips and shoulders with the exception of one three year intermission. He contracted malaria at 41, and the pains became more severe and the joints stiff, until by the end of the year he presented the typical picture of Marie's rhizomelic spondylosis. The parents, the three sisters and the man's children are healthy, as also two brothers, but a third brother, now 28, after a fall at the age of 26, developed spondylosis of the Bechterew type. The forward curve of the rigid spine is alike in both men, and both are farmers; neither is incapacitated.

The Skin of the Forearm in the Tuberculous.—Gargiulo has noticed that the skin of the forearm is uneven and rough in the tuberculous, owing probably to the loss of fat beneath and the effects of excessive sweating.

Semana Médica, Buenos Aires

May 13, 1920, **27**, No. 20

Lethargic Encephalitis at Paris. E. Kreba.—p. 646.
*Spurious Pregnancy (Pseudocyesis). C. Lanza.—p. 652.
Iodized Horse Serum in Diseases of Deranged Metabolism. A. Lamarque.—p. 655.
*Acute Pulmonary Edema During Labor. I. Iriarte.—p. 658.
Advantages of Poly-Organotherapy. A. Guardia Abadal.—p. 658.
Oxidizing Ferments in Tuberculous Congestions and Exudates. S. de Madrid.—p. 667.

Spurious Pregnancy.—Lanza's patient was an apparently normal woman of 26, married for ten years, who had had two abortions and was anxious for a child. She developed the usual symptoms of pregnancy and the abdomen increased regularly in size but this was merely accumulation of fat. She would not believe his denial of pregnancy until the subsidence of all symptoms after "term." A year or so later she developed auditory and visual disturbances, after emotional stress, becoming totally blind for a time. In conclusion Lanza refers to Gurrieri's report of a case of hysteric pregnancy in which the measures instituted by the physician to cure the amenorrhea led to the denunciation by the patient—when the blood appeared—that he had induced abortion. Turenne has also commented on the rapid development of obesity which may accompany the supposed pregnancy. This was particularly manifest in Lanza's case.

Acute Pulmonary Edema During Labor.—Iriarte describes an extremely serious case of this kind in which he evacuated the uterus at once. The loss of blood relieved the circulation and complete recovery followed.

Siglo Médico, Madrid

July 10, 1920, **67**, No. 3474

Serologic Tests for Syphilis. F. Murillo.—p. 505.
Beginnings of Vision after Removal of Congenital Cataracts at 17. R. Castresana.—p. 507. Conc'n.

July 24, 1920, **67**, No. 3476

Serologic Tests for Syphilis. J. Mouriz.—p. 545. Conc'n. p. 568.
*Vaccine Treatment of Otitis. I. Fernández Seco.—p. 547.
Acute Exacerbations of Chronic High Blood Pressure. Elizagaray.—p 549. Cont'd.

Autogenous Vaccines in Otitis.—Fernández reports three cases in children and one in an adult in which acute or long rebellious otitis media yielded to injections of an autogenous vaccine. The staphylococcus was responsible in one child of 4 and the Friedländer pneumobacillus in one of 8. In a girl of 2 and a woman of 27 a polyvalent vaccine was used, comprising staphylococci, pseudodiphtheria bacilli and the pyocyaneus. The suppuration rapidly declined and the cure was complete in all in from twenty days to a little over two months. In a fifth case a minor operation on the ear was needed but was refused, and the vaccine was unable to overcome this handicap, so that no benefit was derived.

Deutsche medizinische Wochenschrift, Berlin

Aug. 5, 1920, **46**, No. 32

No Immunization Against Experimental Tuberculosis by Massive Doses of Antigen. Uhlenhuth and Joetten.—p. 877. Conc'n No. 33, p. 901.
Arsphenamin and Silver Arsphenamin in Syphilis. W. Scholtz.—p. 879.
Reaction to Parenteral Injection of Casein. R. Riedel.—p. 881.
Iodin Prophylaxis in Influenza. H. Salomon.—p. 882.
Treatment of Pleural Empyema in Influenza. Hollenbach.—p. 882.
Examination of Stomach Contents in Children. H. Brüning.—p. 883.
Roentgenology of the Diaphragm in Children. E. Schiff.—p. 884.
A Fistula of the Urachus. Krüer.—p. 885.
Indirect Auscultation under Water. A. Esser.—p. 885.
Pathologic Anatomic Findings from Marburg Trial. Jesnicke.—p. 886.
Otologic Hints for the General Practitioner. G. Brühl.—p. 886.
The Reform Movement in Medical Education. J. Schwalbe.—p. 889. Conc'n.
Steinach's Rejuvenation Method. W. Roux.—p. 891.

Aug. 12, 1920, **46**, No. 33

Indications for the Friedmann Tuberculosis Treatment. A. Dührssen.—p. 902.
Gateways of Infection in Tuberculosis. Koch and Möllers.—p. 904.
History of Pathologic Anatomy of the Nervous System in Relation to Nervous and Mental Disease. Wohlwill.—p. 906.
Biochemistry of Hemolytic Icterus with Splenomegaly. W. Schön.—p. 909.
Induced Pneumothorax. A. Schüle.—p. 910.
*Operation for Female Epispadias. H. R. Schmidt.—p. 910.
Early Involvement of Spinal Cord in Syphilis. Blumenthal.—p. 912.
Desirable Method of Staining Spirochetes. W. Krantz.—p. 913.
A "Fixed" Arsphenamin Rash. A. Kraus.—p. 913.
Potassium Permanganate for Furuncles, etc. Fries.—p. 914.
Foot-Steering Contrivance for Artificial Leg. M. Blumenthal.—p. 914.
Adhesive Plaster to Relieve Headache. Heermann.—p. 916.
Physiology and Pathology of Vegetative System. Renner.—p. 917.
Otologic Hints for the General Practitioner. G. Brühl.—p. 919.

The Göbell-Stöckel Operation for Epispadias in the Female.—Schmidt reports the results secured in three operations for epispadias by the Göbell-Stöckel plastic method. The first patient, aged 20, had been operated on in 1914 without success. She was always wet and the urethral opening was very wide. On dismissal from the hospital following the recent plastic operation she could hold the urine four hours and could sleep through the night from 11 to 6 without accident. In the second case, a girl of 9, operated on at the age of 2 without success, suffered in winter from abdominal pains due to the continuous wet condition of her clothes. Three weeks after the operation she had perfect control of urine in the daytime, but occasionally at night she would find herself wet. The third case cited was that of a woman of 34 with constant dribbling of the urine, on whom an operation had been performed without success at the age of 21. Four weeks after the plastic operation the patient had no trouble if she urinated every two hours, but if more than 150 c.c. of urine was allowed to accumulate, dribbling was likely to occur.

Monatsschrift für Kinderheilkunde, Berlin

August, 1920, **18**, No. 5

Diagnosis of Congenital Heart Defects. E. Rominger.—p. 417.
Tuberculin Diagnosis in Children. E. Rominger.—p. 424.
*Influence of Nervous System on Blood Count. E. Friedberg—p. 432.
*Cholesterin in Kidney Disease in Children. H. Beumer.—p. 443.
*Congenital Cystic Dilatation of Small Intestine. Herweg.—p. 454.

The Influence of the Vegetative Nervous System on White Blood Cells.—Friedberg announces that stimulation of the vegetative nervous system in children exerts no effect on the white blood corpuscles. There is no such a thing as a vagotonic or a sympatheticotonic blood picture. Eosinophil cells have a tendency, in their reactions to stimulation, to parallel variations in the lymphocytes, whereas the monocytes line up with variations in the polymorphonuclear cells. For this reason, it is of practical and theoretic importance always

to make a separate count of the monocytes and the lymphocytes. The marked similarity between the pilocarpin and the epinephrin blood pictures leads to the supposition that these blood reactions are not dependent on the specificity of the ingested drugs but are rather a general form of reaction of the hematopoetic organs to nonspecific stimuli.

Cholesterin in Nephrosis and Nephritis in Children.—Beumer found an increase of cholesterin in the nephrotic organism in the blood serum, kidneys and suprarenals, but not in the liver, which, in fact, shows a decrease. In acute nephritis cholesterin esters are present, but there is no increase of total cholesterin content as is the case in lipoid degeneration of the kidney. A considerable increase of cholesterin in the suprarenals is common to nephrosis and nephritis, but the distribution of cholesterin in the blood and the various organs is not at all uniform. The cholesterin content of each organ is determined by local disease processes and the interdependence of the various organs.

Congenital Cystic Dilatation of the Small Intestine.—Strathmann-Herweg describes an infant of 3 months with incomplete ileus. A roundish protuberance was noted in the region of the navel, which led to the diagnosis of cystic tumor. On account of the weakened condition of the child an operation was not performed, the child dying the day following admission. The cyst proved to be a markedly dilated portion of the small intestine, for in the histologic examination the various layers of the intestinal wall could be clearly distinguished, and the small intestine was very much shorter than usual. It is therefore evident that the cyst was in reality a part of the small intestine and not merely an appendage.

Münchener medizinische Wochenschrift, Munich

July 2, 1920, **67**, No. 27

*Plaut-Vincent Angina. A. Brüggemann.—p. 772.
Stalagmometric Urinalysis and the Clinic. W. Schemensky.—p. 773.
Rerouting of Nervous Impulses. H. Bickel.—p. 775.
*Poisoning with Fluorin Compounds. Kockel and Zimmermann.—p. 777.
Hydrocyanic Acid Derivatives for Vermin. Flury and Hase.—p. 779.
Value of Combined Treatment in Syphilis. W. Wagner.—p. 780.
Blood Picture in Postoperative Tetany. W. Haas.—p. 781.
Undernourishment and Milk Secretion in Women. Momm.—p. 783.
Paraplegia Urinaria; Three Cases. A. Poerster.—p. 784.
Treatment of Surgical Tuberculosis with Vaccines of Cold Blooded Animals. Brandenstein.—p. 786.
*Roentgen Irradiation and Blood Coagulation. A. Szenes.—p. 786.

Plaut-Vincent Angina.—Brüggemann states that of all the remedies that he has tried, neo-arsphenamin has proved most effective. He uses a concentrated, aqueous solution (a few drops of water to 0.3 gm., or 1 ampule, of neo-arsphenamin), with which he swabs the ulcerations. The patients were sometimes instructed to hold the swab on the ulcers for about ten minutes. Usually a marked improvement could be noted the next day, and after a second application recovery generally followed. If not, he injected neo-arsphenamin intravenously (0.3 gm. of neo-arsphenamin with 10 c.c. of water). The value of the neo-arsphenamin did not seem so marked with the intravenous injections as with the intensive local applications. Most patients were cured in a week; in the case of more marked inflammation in from two to three weeks, although one especially severe and refractory case required two months for a cure.

Poisoning by Fluorin Compounds.—Kockel and Zimmermann report two cases of poisoning from hydrofluoric acid. The clinical picture was characterized by marked physical weakness and frequent vomiting. The course of the intoxication was very rapid, covering not much more than two hours before the fatal issue. One case was traced to rat poison and is regarded as a suicide; the other was a criminal poisoning case.

Roentgen Irradiation and Blood Coagulation.—Szenes reports that roentgen irradiation of the spleen brings about an accelerated coagulation of the blood, which corresponds, in a general way, to that produced by intramuscular and intravenous injections of calcium. An initial retardation of coagulation precedes the acceleration. This accelerated coagulation can be still further increased by the intravenous injection of a 10 per cent. sodium chlorid solution. The cause for this accelerated coagulation lies doubtless in the breakdown of cellular structure (lymphocytes of the spleen follicles) and in the liberation of substances exerting a thromboplastic effect. Roentgen irradiation of other cells (tumor cells, lymphoid cells) causes likewise an accelerated coagulation, though to a less degree.

Wiener klinische Wochenschrift, Vienna

July 29, 1920, **33**, No. 31

Treatment of Perforative Peritonitis. Haberer.—p. 671.
Dulness Over Apex of Lung with Goiter. Elias and Pick.—p. 674.
Percussion of Apex of Lung. N. Jagic.—p. 676.
Cystoradioscopy. Blum, Eisler and Hryntschak.—p. 677.
*Sphincterotomy for Retention in Tabetic. Rubritius.—p. 680.
Simulation of Syphilitic Chancre Following Use of "Ortboform." O. Sachs.—p. 680.

Sphincterotomy for Retention of Urine in a Tabetic.—Rubritius reports the case of an army officer of 53 who acquired syphilis in 1892. In 1899 neuralgic pains in the legs appeared. In 1905 bladder trouble began, and soon he was unable to pass urine other than in a squatting position during defecation. Two weeks before his admission to the hospital he grew rapidly worse, with excessive thirst, edema in the legs and dribbling of urine. Residual urine was 800 c.c.; the twenty-four hour specimen, 4,600 c.c.; specific gravity, 1.010; the urine was cloudy, alkaline, contained 0.108 per cent. albumin and a considerable number of pus corpuscles. Preliminary treatment with retention catheter was given. Later an operation was undertaken under local anesthesia. A suprapubic opening into the bladder was made and a deep wedge cut from the posterior commissure of the internal urethral orifice, which removed, at the same time, a portion of the internal sphincter. In four weeks the bladder fistula had closed. Four months after the operation the findings were: no residual urine; moderate cystitis; urine is still passed in squatting position but without residue; patient much improved and well satisfied with his condition. The operation is simple and free from danger. There is no likelihood of incontinence, as the external sphincter is entirely sufficient to serve as a closing muscle.

Zeitschrift für klinische Medizin, Berlin

1919, **88**, No. 5-6

*Jaundice After Arsphenamin. H. Silbergleit and Föckler.—p. 333.
*Monocytosis with Endocarditis. V. Schilling.—p. 377.
Agglutination in Dysentery. R. Hamburger.—p. 398.
*Changes in Size of Heart. Frieda Linss.—p. 407.
Auricular Flutter with Perpetual Arrhythmia. K. Fleischhauer.—p. 429.
*Weil's Disease. H. Reiter.—p. 459.

Jaundice Following Neo-Arsphenamin Treatment.—Silbergleit and Föckler relate that in the winter of 1917-1918 they had thirteen cases of acute yellow atrophy of the liver, all fatal, and all occurring in syphilitics who shortly before had been given mixed mercurial and neo-arsphenamin treatment. In eight other cases severe jaundice developed, but the men recovered. Weil's disease could be excluded, but nothing could be found to explain these cases. A fourteenth case of the atrophy developed outside but it was not known whether the man had been taking treatment or not.

Monocytosis with Endocarditis.—Schilling refers to extreme monocytosis with macrophages during ulcerative endocarditis, and discusses in connection with two cases described the source of origin of the large mononuclears.

Changes in Size of Heart.—Linss reproduces the shifting outline of the heart in thirteen cases of different types of heart disease under the influence of drugs and other factors. The essentially pathologic dilatation of the heart is that with stasis; the heart here does not work according to its normal laws. This can retrogress under appropriate treatment, as was shown in a case of bothriocephalus anemia. Thyroid treatment proved effectual in myogenous dilatation of the myxedematous, but not in other conditions.

Spirochetal Jaundice.—Reiter concludes his long study of Weil's disease with an account of his successful transmission of the disease by means of a biting fly, *Haematopota pluvialis*, the habits of which correspond to what we know of the seasonal and other features of spirochetal jaundice. He has demonstrated that the spirochetes can retain their vitality for

seven days in water and in damp warm soil. In prophylaxis, the particulars of the first case must be ascertained, whether the patient had been digging or been in bathing or been working with bare arms and feet. Measures to correspond should be taken to protect others against the bathing place, or by compelling diggers to wear high boots. The danger is less if the bathing is done in the evening, and a bath robe is worn when lying on the bank. Carriers should be instructed, and the sick isolated from insects.

Zentralblatt für Gewerbehygiene, etc., Berlin

September, 1920, 8, No. 9

*Bladder Tumors in Dye Workers. H. Curschmann.—p. 169. Begun in No. 8, p. 145.
Training of Factory Inspectors. Hertha Bernecker.—p. 176.
System for Prevention of Industrial Accidents. H. Hederich.—p. 179.

Bladder Tumors in Dye Workers.—Curschmann sent a questionnaire to the chemical industries of Germany inquiring as to bladder lesions in the workers. Fifty-seven were filled out and returned. The data show that, since 1913, 28 cases of bladder tumors have been encountered among workers in the chemical industries, and the list includes 15 malignant tumors. This brings to about 200 the total number of cases of bladder tumors among the 80,000 to 100,000 persons employed in the manufacture or handling of chemicals, especially anilin dyes. It is still a question which chemicals are responsible for the tumors, but those with aromatic bases and beta naphthylamin seem to be generally incriminated. Since attention was first called in 1905 to bladder tumors in dye workers, extensive improvements have been made in the care of the workers, and the benefit is apparent in the drop in the number of cases to 28 in seven years notwithstanding that attention has been focused on their detection. Nothing was found to indicate that persons living in the vicinity of chemical works develop bladder tumors more frequently than the average population. Years of contact are necessary. In some of the cases the workmen had been engaged in this work for ten, fifteen, up to thirty years, and in 2 instances for more than thirty years. The outcome in the nonmalignant cases was always favorable, but only 5 in the 15 malignant cases have survived. The cancer proved speedily fatal in the others.

Zentralblatt für Gynäkologie, Leipzig

July 31, 1920, 44, No. 31

The Merits of the Kielland Forceps. K. Riediger.—p. 847.
*Pneumococcus Infection of Genitals. R. Hornung.—p. 850.
*Hematoma of Vulva Impeding Delivery. T. Johannsen.—p. 856.

Primary Pneumococcus Infection of Female Genital Organs.—Hornung cites three cases to prove that primary pneumococcus infection of the genital organs does occur. But he warns that as it has been shown that the pregnant and puerperal uterus constitutes a locus minoris resistentiae for hematogenic infections with pneumococci, a primary infection cannot be regarded as proved unless the clinical, bacteriologic and necropsy findings agree with or supplement each other.

Hematoma of Vulva Preventing Expulsion of the Child.—Johannsen reports a peculiar case in a primipara of 25. During pregnancy there had been an insignificant varicose vein in the vulva. When the midwife arrived ten hours or more after the beginning of labor, she found that a large tumor was preventing the expulsion of the head of the child. Johannsen was called, and on the right labium found a bluish red tumor the size of a child's head. The tumor extended to the anus, covering thus the perineum on the right side and preventing the passage of the head through the vulva. No outward force had been exerted. The patient stated that the tumor had slowly formed after the onset of labor. The tumor was covered with a thin, transparent membrane. An incision in the tumor, about 2 cm. in length, was made but owing to the strong tension a rip from 10 to 12 cm. long occurred. The tumor cavity was full of clotted blood, which was removed at once. In order to hurry matters, lest a violent hemorrhage should occur, forceps were used and the soft perineum gave way under the pressure exerted by the passage of the head. Four sutures were placed in the perineum, one in the vaginal wall and two superficial sutures were taken in the labium to bring the edges of the tumor cavity together. The cavity was not tamponed as it was not bleeding much. A firm bandage was, however, applied. The patient recovered rapidly and was able to nurse her child.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Aug. 7, 1920, 2, No. 6

Paranoid Psychoses in Imbeciles. J. van der Torren.—p. 481.
Cholesterin Content in Sachs-Georgi Reagent. S. T. Bok.—p. 499.
The Miostagmin Reaction with Cancer. Boom and Deelman.—p. 505.
Leukemia Simulating Mikulicz' Disease. Roessingh.—p. 508.
Sulfarsenol in Treatment of Syphilis. S. Mendes da Costa.—p. 513.

Aug. 21, 1920, 2, No. 8

Card for Inspection of Schoolchildren. C. W. Vrendenberg.—p. 691.
*The So-Called Vagus Neuroses. J. Koopman.—p. 692.
*Roentgen-Ray Treatment of Cancer of Genitals. C. Orbaan.—p. 695.
*Treatment of Inversion of Uterus. G. C. Nijhoff.—p. 703.

Vagus Neuroses.—Koopman ridicules the present vogue of "vagus neuroses" and seeks to show that some of the premises on which the conception is based are untenable.

Roentgen-Ray Treatment of Ovary and Testicle Cancer.—Orbaan relates the outcome in 23 cases of malignant ovarian or testicle disease. More than half of the ovarian cases were materially benefited and the cure has been permanent for one and three years to date in 2. Even a very extensive cancer need not be regarded as absolutely hopeless now. Three of the 9 males are still in good health, including a boy of 9 whose other testicle had been removed on account of sarcoma five years before. The recurrence in the testicle was excised the sixth week and proved to be a carcinoma. The last of the three series of postoperative exposures was concluded in September, 1917, and he was in good health in March, 1919. In 6 of the 9 testicle cases the cancer was a sarcoma, as also in 2 of the 11 ovary cases. An operation had been done in all the cases from a few weeks to five years before, and the roentgen exposures were given on account of metastasis or recurrence. In 5 cases the operation could be only partial. In 3 cases the ovarian cancer was a metastasis of a mammary cancer. He comments on the frequency of involvement of the supraclavicular glands in malignant disease of ovaries or testicles; it is a grave sign, as it so often is accompanied by metastasis in the mediastinum. In 7 cases there was extensive involvement of the glands in the region or at a distance, and the roentgen exposures were made without any hope of permanent success, but all in this group were materially improved—both subjectively and objectively—but in 3 other cases no benefit was apparent. This latter group includes a girl of 12; numerous tumors could be palpated in her abdomen four months after removal of a sarcoma in the right ovary. Roentgenotherapy was started but had to be abandoned on account of fever, and the girl died in seven weeks. One of the much improved patients was a woman of 24 with a sarcoma in the knee and neck, both of which rapidly retrogressed under roentgen exposures. Two months later a sarcoma developed in the ovary which was not modified by roentgen exposures or arsenic, during the year, and the ovary was removed May, 1919, and a series of injections of the woman's own ascitic fluid were given. They induced a febrile reaction with pain in the lower abdomen, neck and knee. Since then she has been in good health.

Treatment of Inversion of Uterus.—Nijhoff reports three cases in which acute puerperal inversion of the uterus was corrected with ease and complete success, without injury of the muscular wall such as others have reported from pushing up the uterus from below. He makes an incision on the median line about 12 cm. long, between the umbilicus and the symphysis. This exposes the funnel made by the inverted uterus, and he seizes with forceps the front edge of the inversion funnel. As soon as he feels that the uterus begins to yield to his pull on it, the round ligaments are seized with forceps and the uterus is drawn up by this traction on the round ligaments. He found that it is not necessary to assist by pushing on the uterus from below, and the uterus does not have to be packed with gauze to hold it in place. In his last case he fastened the anterior wall of the uterus to the abdominal wall with catgut, expecting that this fixation would be only temporary as the catgut would be soon absorbed.

Acta Medica Scandinavica, Stockholm

Aug. 31, 1920, **53**, No. 5

*Duration of Systole. L. S. Fridericia.—p. 489.
*Direct Count of Blood Platelets. O. Thomsen.—p. 507.
First Cases of Epidemic Encephalitis in France. R. Cruchet.—p. 517.
*Modern Views of Kidney Disease. F. Umber and M. Rosenberg.—p. 523.

Duration of the Systole.—Fridericia discusses the duration of the systole in the healthy and in heart disease, and the modification under the influence of atropin, epinephrin, amyl nitrite, muscular exercise and fever. The electrocardiograms show that the variation from normal never amounted to as much as 0.047 second. (In German.)

Direct Count of Blood Platelets.—Thomsen sets the citrated blood aside for six hours, by which time the corpuscles have settled to the bottom. The platelets in the fluid above are then counted in the ordinary blood counting chamber. There is no appreciable sedimentation of platelets in this period. In sixty-eight persons examined, pregnant and nonpregnant, healthy and sick, the sedimentation of the corpuscles was always sufficient in two or three hours to allow the plasma to be pipetted off for counting the platelets. The normal range seemed to be between 206,700 and 413,400. Thomsen's article is in English, and he gives a table for ready calculation of the platelets from the one count.

Kidney Disease. — Umber and Rosenberg distinguish between true uremia (retention of residual nitrogen) and eclamptic uremia which has a better prognosis and is encountered principally in young persons, and almost exclusively in acute glomerular nephritis with edema and high blood pressure. Acute edema of the brain is the most plausible explanation of the convulsions, and lumbar puncture the main indication. The uremia with arteriosclerosis of the kidney is a spurious uremia. Retention of nitrogen is the only dangerous form of retention, but when there is excessive production of waste products, the residual nitrogen may accumulate in the blood without the kidneys being responsible. Such a condition may occur in acute atrophy of the liver and when the circulation is hampered from any cause. The normal residual nitrogen level in the blood is from 0.20 to 0.40 gm. per thousand, but when waste products accumulate, the composition changes—as Umber and Rosenberg have confirmed in their more than 2,000 separate tests—and the urea, which normally forms about 45 to 60 per cent. of the residual nitrogen, increases to over 90 per cent. The creatinin in over 1,500 tests varied from 5 to 20 mg. per thousand in the healthy, but it rose with severe liver disease and in diabetic coma, reaching a height of 67 mg. per thousand. From their 1,600 tests for indican, the conclusion is drawn that over 1.3 mg. per thousand is pathognomonic for insufficiency of the kidneys if ileus and purulent processes can be excluded. A high indican and creatinin content with low urea content indicates a more unfavorable prognosis than the reverse. Treatment to date can be only symptomatic, restricting the intake of nitrogen, salt and water but only as the capacity for eliminating one or the other is impaired.

They have never witnessed any harm from a little mustard, pepper, lemon juice or alcohol as seasoning in place of salt. They emphasize the imperative necessity for staying in bed with acute glomerular nephritis until the last trace of hematuria has disappeared and, if possible, until the albuminuria is much less. When allowed to get up the urine should be watched for blood and albumin and the blood pressure tested. Not until these show no appreciable harm from the getting up should the patient be allowed up for short intervals at a time at first. Physical exertion must be strictly warned against to the very last of convalescence, and the urine and blood pressure should be reexamined from time to time for months afterward. The great danger is that true uremia may develop, and this must be warded off by dietetic restrictions, not more than 4 or 5 gm. of protein a day and 1.5 to 2 liters of fluids. They have never seen any benefit from diuretics, but sometimes harm. The attempt to overcome the glomerular obstruction by inducing a sudden freshet of urine has never proved beneficial in their experience, but has done direct harm. In chronic kidney disease, excesses and exposures must be scrupulously avoided.

Finska Läkaresällskapets Handlingar, Helsingfors

July-August, 1920, **62**, No. 7-8

*Bilateral Pleural Empyema. F. Stenius.—p. 369.
*Pituitary Tumor. E. Behse.—p. 382.
Pasteboard Splints for the Legs. R. Faltin.—p. 396.
*Cream Mixture in Intolerance for Milk. G. Renvall.—p. 403.

Bilateral Pleural Empyema.—Stenius states that there has been only one bilateral case, following pneumonia, at the Helsingfors surgical clinic to 120 cases in which the empyema was restricted to the right side and 112 to the left. In the one bilateral case he operated on one side and then on the other, allowing an interval of three and a half weeks, but a week or a week and a half would probably be a long enough interval. It is possible to operate on both sides at the same sitting if valve drainage without danger of pneumothorax can be arranged. The individual conditions must decide the technic to be applied, according to the Carrel, Perthes, Regher, Moszkowicz or other method.

Pituitary Tumor.—Behse gives the detailed case history of a case of pituitary tumor in a cabinet maker of 47. It had entailed acromegály and temporal hemianopsia. He compares the case with others on record and emphasizes the great improvement realized under pituitary treatment, three to ten tablets a day. The excessive thirst abated, as also the somnolency, profuse sweating and glycosuria, the sugar dropping to 2.5 per cent. The man was able to return to work and vision improved to nearly normal in one eye and the other could count fingers at 3 meters.

Cream Mixture as Substitute for Milk in Case of Intolerance.—Renvall has experimented with a test diet given with and without milk and has found marked intolerance for milk in certain cases of achylia, achlorhydria, hyperchlorhydria, hypersecretion and various gastro-intestinal derangements. This intolerance subsided as digestive conditions returned to normal. During the periods of intolerance he has been very successful with cream, used with one-third, or one-half, two-thirds or three-fourths water. The cream has to be of the kind suitable for whipping, and these mixtures represent from 162 to 61 calories, and the patients thrive on them when whole milk induces grave symptoms of severe intolerance. Vegetable milk should be reserved, he thinks, for very special cases. The cream mixtures are nearly always well borne.

Ugeskrift for Læger, Copenhagen

Aug. 19, 1920, **82**, No. 34

*Tardy Hemiplegia in Syphilitics. H. Vedsmand.—p. 1077.
*Urobilinuria as Index of Liver Functioning. O. V. Brandt.—p. 1083.

Tardy Hemiplegia in Syphilitics.—Vedsmand relates that there was a history of syphilis in 15 per cent. of 81 patients with hemiplegia that had developed after 60. He knows of only one publication on the connection between hemiplegia and syphilis since the Wassermann test was introduced. This one article is H. A. Thomas' monograph on 740 cases of hemiplegia; he found syphilis in 11 per cent. of those in the forties; 7 per cent. in the fifties (Vedsmand, 12.5 per cent.); 13 per cent. in the sixties (Vedsmand, 25.7 per cent.), and none beyond this, while Vedsmand had 8.8 per cent. in the seventies.

Urobilinuria as Index of Liver Functioning.—Brandt protests against assuming that urobilin can occur constantly in appreciable amounts in the urine in normal conditions. His repeated tests of fifty persons, entirely healthy or with disease not affecting the liver or digestive organs, elicited a constantly positive response in 6 per cent., that is, with dilution of 1:5. He determines the urobilin content of the urine by mixing 5 c.c. of urine and 5 c.c. of alcohol and adding 50 cg. by weight of pulverized zinc acetate, stirring and filtering. This is repeated with the same amounts of the zinc acetate and the alcohol but with smaller amounts of the urine, diluting with distilled water to bring it up to 5 c.c. The extreme physiologic limit is with 2 c.c. of urine and 3 c.c. of distilled water—the 1:5 dilution. The research described shows further that the findings of a single test cannot be depended on. Only when the response is constant at 1:10 is it certainly pathologic. As a rule, the dilution 1:5 must be regarded as pathologic also, when the reaction is constant.